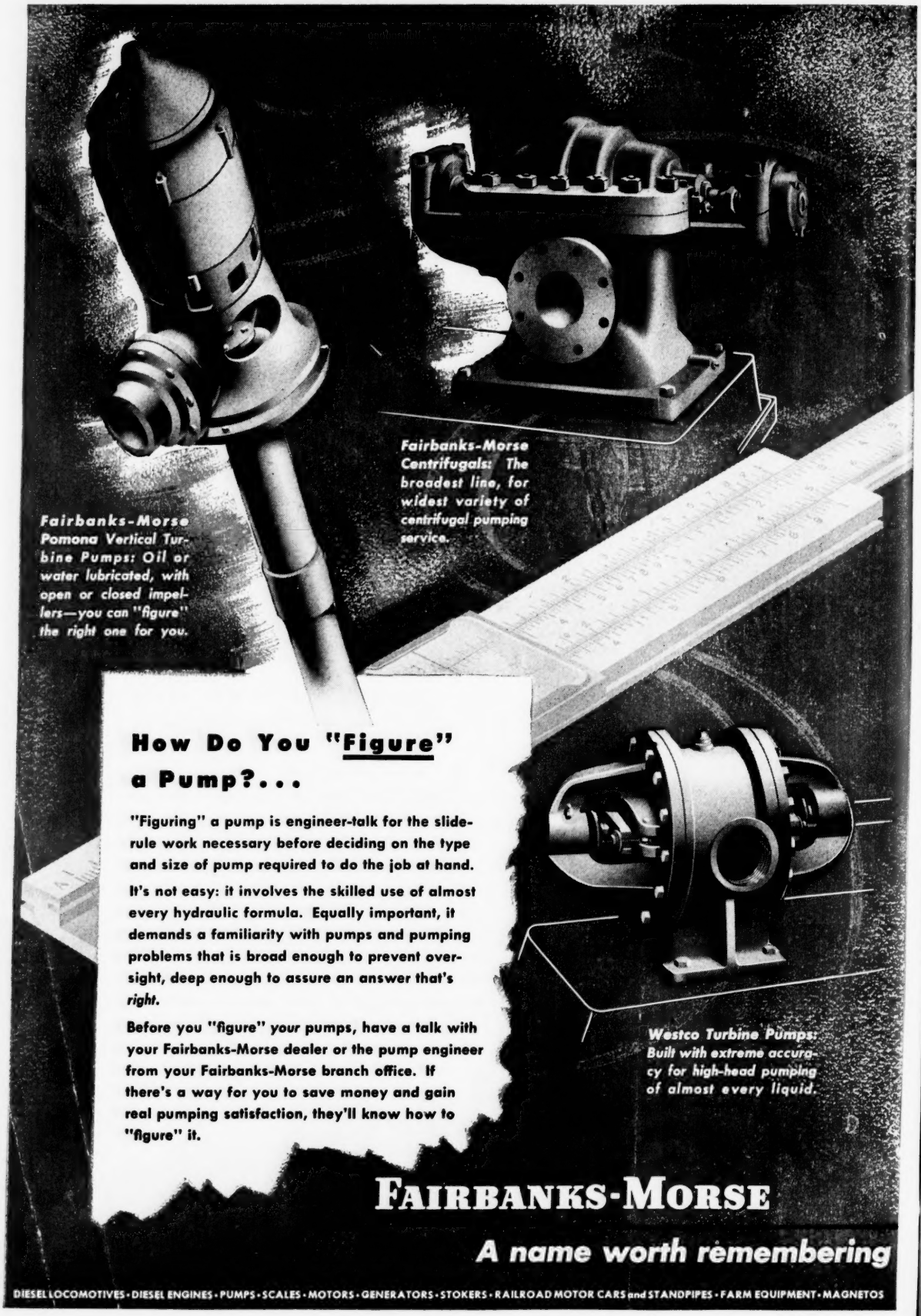
NOVEMBER 1947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MANUFACTURERS RECORD

ESTABLISHED 1882

Devoted to the Industrial Development of the South and Southwest

Volume 116 NOVEMBER, 1947 Number 11

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Cover Picture—Glass block making as practiced at the new Sedalia, Mo. plant of the Pittsburgh Corning Corp. One of two plants—a foam glass unit is under construction—the plant uses an exclusive process. The glass mix is heated to 2900 degrees Fahrenheit. From the furnace it goes to two Duplex pressing machines operated by compressed air, which can produce any kind or size of glass block. Molten glass is pumped into the rotating molds. The blocks are made in halves and then fused together and automatically pumped out to form a vacuum inside.

MANUFACTURERS RECORD PUBLISHING CO.

Publishers of MANUFACTURERS RECORD, CONSTRUCTION, DAILY CONSTRUCTION BULLETIN and BLUE BOOK OF SOUTHERN PROGRESS.

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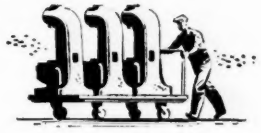
Pacific Coast Office: 227 Spencer St., Glendale 2, Calif.

Subscription Rates: One year $3.00. Two Years $5.00.
Single Copies 35c, back numbers over 3 months old 50c.

"The Manufacturers Record," published monthly by Manufacturers Record Publishing Co., 109 Market Place, Baltimore 3, Md. Entered as second class matter Baltimore, Md., under the act of March 3, 1879. Volume 116, No. 11. Single Copies 35c.



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Southern Business Outlook

Southern factory output regained during the latest month all of the decline experienced during the preceding month. While there was slight further slackening in the production of durable goods throughout most of the 16 states, increase in production of nondurables more than made up the deficit.

Increases also are to be noted in practically all other industrial indices, with electric energy production establishing a new peacetime peak.

Cash resources continue in good supply, with Southern bank deposits up 3.8 per cent over the preceding month, and 26 per cent over a year ago. Bank clearings were off slightly, to the extent of about 4 per cent.

Retail sales reversed the seasonal trend evident during the summer months to record a gain of about 10 per cent for the month. However, distribution at retail is now about 5 per cent below the value of sales a year ago.

Reports generally are optimistic with respect to the remaining months of this year, with the feeling expressed that any setback that may possibly occur during any part of 1948 will not be of more than moderate nature.

MONTHLY INDUSTRIAL ACTIVITY

(16 Southern States)

	Latest Month	*Preceding Month*	*Year Ago*
All Manufacturing (value)	$2,713,686,000	$2,651,035,000	$2,089,721,000
Durable Goods (value)	955,659,000	958,056,000	774,056,000
Nondurables (value)	1,758,027,000	1,692,979,000	1,315,665,000
Steel Output (tons)	1,123,121	1,058,486	1,105,15[illegible]
Pig Iron Output (tons)	777,819	725,463	765,37[illegible]
Cotton Consumed (bales)	628,233	589,400	752,080
Spinning Activity (1000 spindle-hrs.)	7,643,000	7,165,000	7,948,000
Pine Lumber Cut (board feet)	66,004,000	67,934,000	58,747,000
Electric Output (1000 kilowatt-hrs.)	7,345,503	7,056,199	6,696,33[illegible]
Construction Awards (value)	$ 227,471,000	$ 144,644,000	$ 119,552,000

FARMS AND MINERALS

Farm Marketings (value)	$ 654,902,000	$ 597,197,000	$ 609,343,000
Meat Production (head slaughtered)	1,125,400	969,600	467,600
Coal Output (tons)	25,512,000	24,151,000	25,447,000
Crude Petroleum Output (barrels)	101,320,000	103,268,750	90,636,000

FINANCE AND DISTRIBUTION

New Corporations (number)	2,053	2,482	2,186
Business Failures (number)	50	44	11
Bank Deposits	$9,757,000,000	$9,400,000,000	$7,743,000,000
Bank Clearings	$6,098,298,000	$6,382,671,000	$5,916,568,000
Retail Sales	$2,232,989,000	$2,028,033,000*	$2,359,091,000
Carloadings	1,385,922	1,427,389	1,281,565

*Revised. Steel and iron data from reports of American Iron & Steel Institute; Pine Lumber from Southern Pine Association; Crude Oil from American Petroleum Institute; New business and business failures, Dun & Bradstreet; Carloadings, Association of American Railroads; Other data from U. S. federal agency statistics.

MANUFACTURING EMPLOYMENT

(Persons Employed)

	Durable Goods		*Nondurables*		*All Manufacturing*	
	Latest Month	*Preceding Month*	*Latest Month*	*Preceding Month*	*Latest Month*	*Year Ago*
Alabama	135,000	136,000	94,000	91,000	229,000	227,000
Arkansas	47,000	47,000	24,000	23,000	71,000	70,000
Florida	31,000	32,000	45,000	45,000	76,000	74,000
Georgia	69,000	69,000	183,000	177,000	252,000	243,000
Kentucky	62,000	62,000	68,000	66,000	130,000	127,000
Louisiana	58,000	58,000	85,000	83,000	143,000	128,000
Maryland	105,000	104,000	123,000	114,000	228,000	249,000
Mississippi	56,000	56,000	34,000	33,000	90,000	90,000
Missouri	149,000	150,000	210,000	202,000	359,000	350,000
North Carolina	90,000	90,000	285,000	275,000	375,000	361,000
Oklahoma	21,000	19,000	34,000	35,000	55,000	54,000
South Carolina	35,000	35,000	159,000	153,000	194,000	186,000
Tennessee	86,000	87,000	167,000	161,000	253,000	242,000
Texas	140,000	139,000	202,000	196,000	342,000	316,000
Virginia	68,000	68,000	144,000	143,000	212,000	209,000
West Virginia	85,000	86,000	50,000	48,000	135,000	134,000
South	1,237,000	1,238,000	1,907,000	1,845,000	3,144,000	3,063,000

Of the above tabulation, data for Florida are figures rounded to nearest thousand from the monthly statistical report of Florida Industrial Commission; Maryland, State Department of Labor and Industry; Louisiana, Louisiana State University, College of Commerce; North Carolina, State Department of Labor; Oklahoma, State Employment Security Commission; Tennessee, State Department of Employment Security; Texas, The University of Texas, Bureau of Business Research; Virginia, Department Labor and Industry. In the absence of cooperative aid from other states, the remaining figures are result of monthly surveys by MANUFACTURERS RECORD.

Birmingham District

By R. W. KINCEY

Birmingham—Steel is trying its level best to squeeze a few more tons out of its production schedule in this district.

Which is not to be taken too optimistically by users since the current schedule of 99 per cent has been in effect for many months.

But T.C.I. is, for the first time since the war, operating all nine of its blast furnaces, all its coke ovens and every piece of productive equipment at its command.

And still the cry for steel—and iron—continues. Indications are that it will continue indefinitely. The picture is not a reassuring one for established industries. It is even more dismal when measured in terms of prospective new industries. But Birmingham gains some consolation from the fact that it is not exclusive to this district.

And yet the district moves forward on many fronts. Construction projects are not too numerous, so far as new structures are concerned, except in the field of apartments. Many renovations and modernizations, however, are under way.

Attention of the entire South is currently focused upon Southern Research Institute. Dr. W. A. Lazier, its director, reported at a recent meeting of the trustees that operations for the first eight months of this year totaled $197,642, an increase of 52 per cent over the same period last year.

Thomas W. Martin, chairman told the trustees he was confident substantial additional contributions would be forthcoming from sponsors to the capital fund "In the light of its demonstrated ability to help lift the economic level of the South."

The institute's personnel now numbers 78, including 46 men and women on the research staff. A number of new contracts for sponsored research work have just been signed.

November 12 will be a red letter day in the life of the institute. A dinner meeting will follow a business session of the council members and will mark formal opening and dedication of the first of the institute's new laboratory buildings.

Charles F. Kettering, scientist, inventor and manufacturer, will address the dinner meeting. More than 600 of the South's leading industrialists, business men, scientists and educators will be here for the occasion.

Comes another heartening announcement from Mr. Martin, this time as president of the Alabama Power Company, in disclosure that the company has placed an order with General Electric Co., for an additional steam electric generator of maximum capacity of 100,000 kilowatts. It will be installed at the Gorgas plant or at the new $12,000,000 Gadsden plant, now under construction, Mr. Martin said. Cost of the new program, including distribution lines and incidentals, is expected to run between $10,000,000 and $15,000,000.

The new unit will be the largest on the company's line; one of the largest in the nation. Said Mr. Martin:

"Our studies indicate that Alabama and the entire South is facing the greatest industrial growth in its history. In keeping with its long-established policy of being ready to meet increased demands for power whenever they arise, the company is planning this substantial increase in its power plant capacity."

The community is going out after smoke abatement again in real earnest. Behind the project is the Smoke Abatement Committee of the Junior Chamber of Commerce which considers the existing ordinance inadequate: will try to plug the loopholes. And then, the committee says, the heat will be put on and kept on.

Production of coal shows a substantial increase thus far this year over last. The figures for the two periods are 12,627,000 and 11,918,000 tons, respectively. Red ore production for the two periods was 5,067,459 and 4,123,910 tons.

Interesting production is under way in several of the district's plants. Connors Steel Company is attracting considerable attention with some of its processes and products, as is Continental Gin, for many years a stalwart in the industrial field here.

Developments continue, moderately but certainly.

To Rust Engineering Co., Birmingham and Pittsburgh, has gone contract for design and construction of American Rock Wool Company's new plant here. The company recently purchased from WAA the former plant of Southern Detinning Company in Birmingham for production of rock wool. The contract with Rust calls for removal of existing equipment, construction of storage and cupola buildings, structural changes in existing buildings, and installation of production equipment. The job will entail about $400,000. Production should be under way here next July.

Of widespread interest throughout Alabama was the annual meeting of Associated Industries of Alabama, October 22 and 23. The organization renewed, for the first time since the war, its industrial relations institute with prominent participants including Hugh P. Bigler, executive vice president, Connors Steel Co.; Lon B. Moreland, superintendent of personal relations, Aluminum Ore Co., Mobile; R. K. Argo, director of personal relations, Alabama Mills; Warran Whitney, vice president, James B. Clow Sons, and others.

Louis Ruthenburg, president and general manager, Servel, Inc., was speaker at the annual dinner meeting.

Several major changes in personnel were announced during the month. Walter J. Mahany, manager of Birmingham operations for Southern States Iron Roofing Company, went to Savannah as vicepresident of operations. Succeeding him here was Hugh O. Nash, moved from Savannah.

T.C.I. announced appointment of John H. Williamson as manager of industrial relations succeeding Walter J. Kelly, who has been temporarily transferred to Pittsburgh to serve on the corporations's board of conciliation and arbitration.

Elmer F. Harris was made assistant to the general superintendent of the Fairfield sheet and tin mills, and Clifford H. Bateman, Jr., former metallurgical engineer, of the same mill, succeeded Mr. Harris as assistant superintendent of the mill. Succeeding Mr. Bateman as metallurgical engineer was J. E. Hill, formerly plant metallurgist.

Hugh Morrow, president of Sloss-Sheffield, announced election of C. S. Lawson, vice president, to the company's board. Mr. Lawson fills the vacancy created by the resignation of Henry Parsons, of New York.

The Southeast

By JOHN MEBANE

Atlanta—In the midst of the flurry over high prices, concern over developments in Europe and chirrups here and there about an imminent depression, the industrial economy of the Southeast continues to expand.

Highlighting this is the disclosure that during the first nine months of this year the aggregate payrolls in metropolitan Atlanta have been increased by $6,000,000 annually as a result of the establishment here of 266 new concerns employing a total of 3,022 persons.

Frank K. Shaw, engineer-secretary of the Industrial Bureau of the Atlanta Chamber of Commerce, discloses that during this period there have been established in Atlanta 119 new manufacturing enterprises employing 1,965 persons; 13 branch distribution plants or sales and service offices of out-of-town firms employing 1,023 persons, and 30 resident representatives of national concerns.

The picture is even more optimistic. Mr. Shaw added that as a result of a "prospecting" trip to the Midwest recently, 28 new prospective businesses were developed for Atlanta. The total of prospective new industries for this city now is 375. Mr. Shaw says that "it looks as if some $25,000,000 worth of new industrial construction and 8,000 new jobs can be anticipated in the future" as a result of 64 calls he made in the Midwest.

This expanding industrial picture is by no means limited to Atlanta.

Textron, Inc., of New York, is establishing a new plant in Royston, Ga., with an annual payroll or nearly $400,000. The plant will employ between 300 and 350 workers and will be Royston's only large industry except for a cotton mill. The building to house its operations is being constructed by the newly-organized Royston Development Corporation which raised $30,000 by sales of shares of stock and $45,000 additional through a bank loan. The corporation will give Textron a 10-year lease on the building.

The paper industry in the region continues to grow apace

with a variety of expansions under way.

Cashing of terminal leave bonds put a great deal of money into circulation in this area. The Federal Reserve Bank of Atlanta reveals that by September 19, about 450.000 veterans in the Sixth Federal Reserve District had presented their bonds and had received for them approximately $90,000,000. However, department store sales in the district in September were somewhat lower than for the corresponding month last year. The Federal Reserve Bank reports in its Monthly Review that larger proportions of consumers' expenditures are now going for such durable goods as building materials, home furnishings and automobiles than were spent for this type of goods last year. Generally, the increasing cost of food is cited as probably the major reason why consumers are spending less for other items.

The bank adds: "The greater buying of durable goods by consumers partly explains the expanded accounts receivable of retailers. At the department stores, installment accounts were 73 per cent greater this August than they were last August. In the same period furniture store accounts receivable expanded 34 per cent and the accounts of household appliance stores 85 per cent. This tendency toward greater credit buying had become apparent in 1946. It was one of the things that explained how consumer expenditures throughout the United States could increase more than personal incomes did."

As for agriculture, the bank says that in general, farm prices in this district have risen less than in the nation as a whole. It says that during the year ended in August, farm prices increased 2 per cent in Alabama, 5 per cent in Georgia, 6 per cent in Tennessee, and 16 per cent in Louisiana. Moreover, average prices received by farmers and growers in Florida were 17 per cent lower in August than a year ago.

In a painstaking study in the Review by Charles T. Taylor, of the bank's research department, of the disposal of war facilities and plants in the district, it is asserted that of the 108 manufacturers whose facilities were enlarged during the war by the government, all except five are producing at present and that although they employ fewer workers than during the war, they employ more than in the prewar period. Mr. Taylor discloses that thus far this year employment has exceeded prewar employment by 12 per cent.

Seventeen of the 25 shipbuilding companies in operation in the district during the war are operating now, and they are almost entirely those which were operating before the war. Employment in these shipyards, however, is only about 23,000 persons, compared with around 190,000 during the war peak.

The district's chemical plants, Mr. Taylor asserts, have a bright outlook, and postwar markets for steel and petroleum products and synthetic rubber have been good. The outlook also is bright for the district's light metals industry.

The first "Made-in-Georgia" exposition held here in October highlighted much of this area's progress in diversification in industry. Thousands visited the displays and went away impressed with the ability of the South to produce, and to compete, in a variety of industrial fields which have opened up since the prewar period. The success was termed great enough to schedule another similar show next year.

Price conditions were highlighted here in mid-October when a congressional subcommittee studying high prices held a two-day public hearing.

The consensus of the majority of witnesses was that perhaps the most urgent need for effecting lower prices was a greater industrial productivity—more output per man hour—so that supply could catch up with demand. With the exception of organized labor, almost all witnesses before the committee agreed that it would be highly impracticable to reinstate price controls.

Although price rises were laid to a variety of causes, the chief blame seemed to fall upon unprecedentedly high consumer incomes plus pent-up demands for merchandise, with one witness testifying that people today expect high prices, are buying all they can, with their purchases limited only by their ability to pay.

One witness, J. J. Doran, treasurer of the large Davison-Paxon Co., advocated the establishment of a "peace production board," similar in a way to the old War Production Board, to attempt to stimulate greater production to meet the peacetime demand.

Piedmont Area

By J. A. DALY

Charlotte—Discontent over the distorted price structure pervaded Piedmont area business and industry at the advent of November. Complaints of severely narrowed profit margins came from power, communications, transportation and various smaller industries caught in a "squeeze" while reporting near-record operations.

Numerous corporate executives also complained that depreciation charges, based on acquisition costs, exaggerate profits and are seriously inadequate to current high replacement costs.

Some fear of an approaching acute electric power shortage spread over Southeastern industry. Seldom equalled rainfall unexpectedly ended the water supply crisis for Winston-Salem, but steadily shrinking water reserves in middle South Carolina hydro-electric plants' lakes darkened prospects for consumers in Greenwood, Abbeville, Laurens and Newberry. Some curtailment of textile mill operations was necessitated in mid-October.

The Duke company's narrow electric power reserve against approaching Carolina seasonal peaks was reduced when substantial emergency supplies were provided to Abbeville area industry in co-operation with the Army, South Carolina Electric Co. and the drought-stricken Buzzards Roost System.

Urgent Carolina need for additional power is reflected in five major companies' expansion programs totaling $85,000,000.

Meantime, levels of Piedmont business continued around the peaks, stimulated by seasonal conditions. High operating rates persisted in construction and textile manufacturing. Piedmont area retailing rebounded strongly in October after the first August-September slump since pre-war years. Wholesalers were making strong efforts to hold inventories within manageable limits and working capital was adequate. Retailers' inventories increased in units and value.

Merchants' sales promotion and inventory reduction resulted in post-war record volumes of daily newspaper advertising.

An emergency 10 per cent increase in Carolina intrastate freight rates was granted, matching an interstate boost. Southern Bell applied for a $680,000 annual increase in North Carolina domestic telephone rates.

Farm prices for major agricultural products lately showed diverse trends—strongly down for tobacco and strongly up for cotton, cottonseed, grains, and milk. Firm prices and heavy demand were reported for paper products, feedstuffs, household electrical appliances, industrial and farm machinery and equipment, automotive products, and chemicals.

Warehouse operating distributors of miscellaneous merchandise reported high rates of activity, reflecting dealers' desire to obtain quick deliveries while holding down inventories.

Federal data placed the two Carolians' farm income for this year's first-half at 12 per cent above the 1946 period, compared with a nationwide gain of 35 per cent. Bankers reported Carolina farmers' cash savings far above recent years despite relatively great debt reductions.

A cautionary signal, however, was the Federal report that, while farm prices averaged in October 11 per cent above a year ago, prices the farmers pay were up 16 per cent.

North Carolina State College statisticians reported that the state's farm land prices are 139 per cent above the 1935-39 averages, a gain exceeded only by Kentucky's 170 per cent. However, a bank survey showed a slight decrease in these North Carolina prices since March.

Demand for farm equipment still exceeded manufacturers' increased deliveries to dealers, who confidently expect at least another year of record-level sales.

Emphasizing economic distortions, basic food prices recently were at least 30 per cent above a year ago and 180 per cent of the 1926 average while farm products were 187 per cent of the average and 24 per cent higher than a year ago. (U. S. data.)

The Wachovia Bank & Trust Co., Charlotte office, suggested that "business men need not be alarmed by insistent recession talk but should use careful judgment during the months ahead."

Reflecting a large body of Piedmont management opinion, J. W. Knowlton, Duke Power Co. economist, told the Edison

Electric Institute at Atlanta that American world aid policies inevitably entail national hazards. "No matter which way we roll the dice, we are going to find that they are heavily loaded against us." He analyzed the outlook:

"If we continue substantial foreign aid, our farm and city relations will suffer and bring deflation—if we do not extend sufficient aid to Europe, we are going to bring on a rapid collapse in the earning power of American corporations."

Several dependable statistical agencies reported that the Piedmont's early Autumn construction activities were as much as 20 per cent above a year ago, including sharp expansion in heavy engineering contracts.

Dun & Bradstreet Charlotte agency reported that the South Atlantic area leads the nation's geographical divisions percentage-wise in new construction increases. The August gain for this area was given as 74 per cent over the 1946 month. A financial source estimated the average cost of a South Atlantic housing unit at $8,000, or 60 per cent above 1939.

All reports indicated that Carolina lumbering is holding around record levels. South Carolina sawmills, for instance, lifted 1946 output 40 per cent above 1945 to 993,500,000 board-feet. (Census Bureau.)

Associations of construction contractors and building materials dealers reported that demand for Southern pine lumber was decreasing and prices were slipping from "unwarranted highs". Producers' inventories were rising. However, boards' prices remained strong and specified length orders were difficult to place.

Freight car shortages bolstered prices of Northwestern lumber. Hardwood flooring demand was heavy and Southern production continued high. Nails were scarce; sewer pipe prices strong, and paint and roofing prices stabilizing. Heavy demand persisted for hardware, tools, building and plumbing supplies, with numerous items scarce.

The Census Bureau reported Charlotte's retail sales for the first eight months of this year 19 per cent above the 1946 period and over the Southeast wholesale sales were up 26 per cent. Largest wholesale increases were building materials, 72 per cent; electrical, 41 per cent; furniture, 34 per cent.

Leading Charlotte retailers reported difficulty in filling the still great demand for merchandise. Especially trying is the problem of obtaining Winter and pre-Spring fashion goods, for which a tremendous demand is foreseen. Representative shops reported steady buying of men's clothing. A moderate, seasonal decline in some luxury goods was reported. All customers checked carefully on quality. In groceries, demand became highly selective.

Credit and installment buying increased moderately and bankers reported substantial gains in personal loans.

North Carolina's great furniture manufacturing industry continued to successfully hold the price line though some upward adjustments were made. Complaints of narrow profit margins were numerous. Industry leaders forecast that furniture's boom will continue through 1948.

In October, the cotton spinning industry continued the uptrend which began in August. Many mills have sold their textiles output well into next year at prevailing high prices. Commercial bag fabrics demand significantly revived briskly.

Prices of many cotton, wool and rayon textiles lately have been advanced substantially, as have ordinary hosiery yarns, and all prices were strong as October ended. Cotton print cloth wholesaled at $1.04 a pound.

With domestic consumption of cotton textiles holding far above peace-time annual record rates, American cotton cloth exports in seven months this year totaled 837,000,000 yards, against 367,500,000 yards in all of 1937. (American Cotton Manufacturers Association.)

The Textile Workers Union of America (CIO) Charlotte office reported the start of a drive for a 15-cent-per-hour wage raise for 125,000 workers in 190 Southern mills under contract with this union.

The Government's October cotton crop estimate, reduced to 11,500,000 bales, dissipated any hopes for a 1948 decline in textile prices. A cotton supply pinch appears inevitable, even if exports remain low.

Cotton futures developed strength in mid-October and spot cotton dealers were quoting cotton to the mills at premiums of 1 cent to 7 cents a pound over December futures for staples ranging from 1 inch to 1-5/32d inches, middling. This reflected great textile industry needs and scarcities of these descirptions. Mill buying for inventory was moderate but was insistent for immediate needs.

Official figures revealed that the farmers were placing little cotton in the Government loan, which is 28.8 cents a pound, middling inch staple, Carolina mill area.

Southern sociologists addressing the Catholic Committee of the South at Charlotte viewed gloomily the trend toward mechanization of agriculture and predicted that 5,000,000 persons will be displaced from Southern farms by 1965. This process was described as "the real Southern revolution."

With qualities of tobacco steadily declining, Carolina prices were heavy as the marketing season neared its end. Official figures for flue cured belt sales late in October set average prices at $41.15 to $45.92 in the different centers, per hundredweight. The season's average was estimated around $44, or about $7 below the season's average for last year's record 2,312,000,000-pound crop. The 1947 crop is about 250,000,000 pounds less, of which the two Carolinas produced 1,046,140,000 pounds.

Official data also showed that South Carolina's August-September tobacco sales were 119,376,462 pounds, decreased 22,213,884 pounds from the same 1946 period, and the average price dropped $7.08 per hundredweight to $42.33, reducing these months' marketings to $50,531,381, a decline of $19,429,430.

Federal data showed that American tobacco farmers have been hard hit by Britian's leaf imports curtailment. For seven months of 1947, imports from America totaled 111,300,000 pounds, valued at $73,400,000, against 208,600,000 pounds and $118,400,000 for the same 1946 months.

North Carolina tobacco growers apparently favor a 20 per cent 1948 acreage reduction. Farmers' sentiment seemed to favor increases in grains.

High level business activity still is reflected in record Piedmont sales of auto and truck replacement parts and service. Rail and highway freight traffic is holding near all-time record volumes. Despite new peaks in motor truck output, Piedmont dealers reported unfilled orders steady.

Used-car sales brisk, but prices eased mildly. The new-car situation still harassed dealers whose shops were rushed to capacity.

North Carolina's State Government reported general fund revenues of $23,789,000 in the fiscal year's first quarter, a gain of $4,459,000 over the 1946 quarter. The September total, $8,004,000, was a gain of $1,712,000 over the 1946 month.

North Carolina awarded $1,775,000 in additional highway contracts and South Carolina opened bids on construction of eight bridges and 87 miles of highways. North Carolina's Government started a $200,000 advertising campaign. Durham reported nine months' industrial payrolls at $20,430,000, a gain of $3,693,400 over the same 1946 months.

Spartanburg announced a $586,000 waterworks expansion program and Winston-Salem went ahead with plans for a $4,000,000 project. Raleigh Mining Co., a subsidiary of Walter A. Bledsoe Co., Terre Haute, Ind., began a $1,000,000 rehabilitation of Deep River coal field, near Sanford, N. C.

Charlotte's bank clearings continued to set records. The nine months' total of $2,603,242,058, compared with $2,162,951,053 for the same 1946 months. The third-quarter total of $862,506,542, compared with $814,629,306 a year ago. For the four-week period ended Oct. 15, the total was $300,765,280, against $268,003,553 for the same weeks last year.

September postal receipts at Charlotte of $168,134 were $22,362 above the 1946 month and gave a nine-month total of $1,475,077, up $207,212 over the same 1946 period.

The Southwest

By DAN SUMMERS

Dallas—An October report of the Bureau of Business Research at the University of Texas revealed significant employment and pay-roll gains during August in the chemical, petroleum, iron and steel industries of Texas. Both employment and pay-rolls maintained their peak level with 341,500 persons engaged in employment at these industries. Non-manufacturing

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businesses counted 1,317,500 workers.

While this boom employment supported wages at new highs, department stores said they had noticed a change in their sales. The customers were still spending, but the buying was elsewhere. Department stores during August and early September felt a continued decline of business which began last May against the volume business reported for the same period last year.

The Federal Reserve Bank at Dallas eyed the figures, concluded the downward trend of spending in department stores reflects a considerable shift in consumer buying from soft goods to major durables. There is a growing lack of balance between prices in different segments of the economy, the bank officials commented, and between cost-of-living prices generally and consumers incomes.

The gradual fall of department stores sales appeared to most economists as a reverse of a succession of year-to-year increases in monthly sales which go back to September, 1942.

The bank district in the Southwest reported an increase in total deposits up to September 10 amounting to $11,000,000, another rise in loans of about $16,700,000 and a decline in total investments of $14,700,000. Largest decreases in bank debits were reported at Roswell, N. M.; Amarillo, Fort Worth and Wichita Falls, Texas.

While the high level of prices was the large factor in the increased loans, business activity in the Southwest and the seasonal factors were also responsible. Almost $12,000,000 of the loans were for commercial, industrial and agricultural projects.

Amarillo, with its large decrease in bank debits, led the nation with an 18 per cent increase in sales, according to a survey by Forbes Magazine of Business. Further evidence of big volume sales in the area was Houston, second to Amarillo, with a 15 per cent increase. Shreveport tied with two other cities for fifth position in the survey with 12 per cent jump in sales below the 14 per cent rise at Mobile, Ala., and Butte, Mont. The comparison was with sales of September, 1946. The whole of the Southwest sold 8 per cent over August and September, last year.

The October tide of business and industrial news in the Southwest washed in a brief but exciting announcement from the oil-soaked East Texas area. Longview, heart of the old but still wealthy and producing East Texas oil fields opened by Dad Joiner, said it was going to build the largest power plant in the nation.

Southwestern Gas & Electric Co. will build a steam-electric plant on Lake Cherokee, seven miles southeast of Longview, and use natural gas in the area for fuel for the operation of the plant. Steam will be condensed and all water used in generating the power returned to the lake through a mile-long channel.

Fred M. Wilkes, president of the company, said construction work at the site will begin immediately. Four 35,000-kilowatt generators will be moved in eventually, the first one next spring, for serving industries, businesses and homes in the sprawling East Texas area.

Mr. Wilkes completed negotiations for the location with Vern A. Clements, Longview banker who is chairman of the group that promoted Lake Cherokee for recreational purposes; John Alford, Henderson, and S. S. Laird, Kilgore. Present size of the lake, which is in the area of the old Cherokee bayou, is about twenty square miles.

Reason for the Gregg County location, Mr. Wilkes stated, was the abundant water supply and unlimited natural gas in the area surrounding Longview and the lake. The plant will use 5 trillion cubic feet of gas each year after the four generators have been installed.

Clements said the power plant will be a great support to the rapid industrialization of East Texas, especially Longview where many industries, including the huge Le Tourneau plant for manufacturing earth moving equipment, have been already erected. Santa Fe Railroad will build a five-mile spur from Easton to the plant which is only four miles from the $4,000,000 Gregg County Airport. Developers of the project said it would create one of the largest industrial areas in the nation with its low-cost electrical power.

A Longview firm, the Trans-Continental Gas Pipe Line Co., will need $20,000,000 additional to build its Texas to New York natural gas line and has amended its application for permission to construct the line to read $150 million cost estimate. Eighteen compressor stations will be necessary along the route of the line.

At Austin, Claude Williams, president of Transcontinental Pipe Line Co., has announced that right-of-way has been mapped but not obtained for his firm's $450,000,000 pipe line project which will supply the East with natural gas from South Texas fields. Williams added that securing the land will be no problem. The first of three major pipe lines planned by the company will be laid by 1950. The 26-inch line will carry 375,000,000 cubic feet daily and follow a route south of Houston to Baton Rouge, La., to Atlanta, Ga., Baltimore, Philadelphia and New York.

A study of the possibilities of developing San Antonio into a woolen center began in October after three industries outside the state inquired of the wool and mohair production there. A glance at Houston Pipe Line Company's advertisement in the October issue of the Manufacturers Record would reveal that Texas produces 80,000,000 pounds of wool per year or about 25 per cent of the national production.

San Antonio is the world's largest goat market and is about fifteen miles from New Braunfels and the Pioneer Worsted Mills, one of the few plants in the Southwest engaged in scouring and combing wool. A committee of San Antonio business men have agreed to gather data on utilities, waste disposal, labor and other facts of interest to the inquiring industries.

The Alamo city is also awaiting final word from the Department of Commerce on the establishment of a foreign trade zone in the city. An operating agreement between the city and Scobey Fireproof Storage Co., has been signed. The contract provides that 7½ acres of land at the municipal airport will be leased to Scobey on condition that the storage company construct and operate the trade zone, giving 2½ per cent of the net profit to the city.

Establishment of the zone would mean that merchandise imported from Mexico and other countries could be sorted, processed, repacked, labeled and graded prior to payment of duties. Duties would be paid only after such merchandise would pass from the zone to the importer. The facilities would encourage imports, principally from Mexico.

Continental Oil Co., with headquarters at Ponca City, Okla., will be expected to announce plans soon for construction of what should be the largest crude oil refinery in the Corpus Christi area combined with a natural gas processing plant. The plant is expected to use the Fischer-Tropsch process developed by Germany during the war which converts natural gas from gas and gas-distillate wells into fairly high octane motor fuel and Diesel fuel oils. A similar process will be used at the new $25,000,000 Hydrocol, Inc., plant near Brownsville.

Studebaker Corporation inspected a few locations in Nuevo Laredo, Mexico, across the border from Laredo, Texas, during October for possible establishment there of an assembly plant for automobiles and trucks. Al C. Marranes, chief production engineer for Studebaker, led the official party on the tour which continued to Mexico City where they conferred with their representative there.

At Houston, J. C. Moore, president of the National Federation of Paint & Varnish Production Clubs, told representatives of the industry there that national sales of their products will top the $1 billion mark this year. They had reason to believe him. James Bute Co. plans a $500,000 factory there for the manufacture of paints, varnishes and paint remover preparations and work has been started on a $300,000 addition to Cook Paint & Varnish Company's plant in Houston. The plant and warehouse addition will double production, officials have stated. The expansion is in the department which manufactures a complete line of paint and lacquers for industry and trade.

August Hafner, president of Hafner Associates, Inc., New York textile concern, indicated by a visit to Houston in October that his firm may establish a branch plant there to spin, weave and dye fabrics. An estimated $750,000 worth of equipment would be moved to Houston if Hafner's succeeds in locating about a $500,000 building to lease with option to buy later.

John W. Carpenter, president of the Texas Power & Light Co., Dallas, has accepted the position of chairman of Lone Star Steel Company's board of directors. He resigned recently as president of the company and was succeeded by E. B. Germany, Dallas oilman. The War Assets Administration regional office at Grand Prairie, near Dallas, has offered for sale to the highest bidder a carbon black plant at Seagraves, Texas, capable of producing 13 million pounds of carbon black annually. The plant

(*Continued on page* 60)

NEW AND EXPANDING PLANTS

COMPILED FROM REPORTS PUBLISHED IN THE DAILY CONSTRUCTION BULLETIN

ALABAMA

Alabama-Tennesse Natural Gas Co. Facilities to make natural gas available to industrial operations.

ANNISTON — Tape-Craft, Inc., $80,000 expansion program.

ANNISTON — Monsanto Chemical Co., service building at Anniston plant.

BIRMINGHAM—W. J. Bullock Co., bathhouse and chemical laboratory, $75,000.

BIRMINGHAM—Boggs Brokerage Co., $85,000, refrigeration storage and office building.

BIRMINGHAM — O. Z. Hall Motor, Inc., sales and service building, $80,000.

BIRMINGHAM — Southern Bell Telephone & Telegraph Co., $51,580 dial office No. 9, $37,887 for dial office No. 52.

BIRMINGHAM — American Brake Shoe Co., $30,000 office, wash room and locker room building.

FLORENCE — City shop, garage and warehouse building for Electricity Department

HUNTSVILLE—Huntsville Manufacturing Co., $1,000,000 expansion program.

HUNTSVILLE — Keller Motors Corp., installing machinery.

LINEVILLE — Lineville Manufacturing Co., building for manufacture of men's and boys' clothing.

MOBILE — Pioneer Electric Co-operative, building for warehouse, repair, etc.

MOBILE—National Gypsum Co., addition, $150,000.

MONTGOMERY — Dairy Producers, $279,000 milk processing and ice cream factory.

MONTGOMERY — Marshall Lumber & Mill Co., mill work manufacturing plant, $150,000.

MONTGOMERY — Coca-Cola Bottling Co., bottling plant addition.

MONTGOMERY — Southern Farmer, building.

TUSCALOOSA — Anders Motor Co., Inc., garage building, $50,000.

TROY — Lanier Engineering Co., $288,765, 254.63 miles of copper and aluminum REA lines.

ARKANSAS

BLYTHEVILLE — Arkansas-Missouri Power Co., $1,000,000 improvements.

EUDORA — George E. Wilson Motor Co., sales and service building, $30,000.

FORREST CITY — Arkansas Foundry Co., $150,000 improvements; steel warehouse and Quonset Building.

HOT SPRINGS — Arville Tillery, auto agency building, $20,000.

LITTLE ROCK — Arkansas Motor Freight Lines, Inc., terminal.

ROGERS — Ozark Bag Co., bag processing buildings.

WYNNE — Wynne Ice & Coal Co., $55,000 improvements to ice plant.

FLORIDA

Florida Power & Light Co., addition to Sarasota, Riviera, Sanford and Miami extensions and additions to three other projects.

BARTOW — Bartow Frozen Foods Co., cold storage locker room, $60,000.

DADE COUNTY — Florida Power & Light Co., electric generating station, $350,000.

JACKSONVILLE — John Emile, launderette.

LAFAYETTE — Huval Baking Co., Alterations and additions to bakery plant.

MIAMI — Dean & King, Inc., industrial buildings, $14,000.

MIAMI — Post Institute Laboratories, Inc., convert existing warehouse to chemical research laboratory, $23,000.

MIAMI — Texas Co., service station, $20,000.

MIAMI — Doris Levy, cold storage building, $30,000.

MIAMI — Singer Sewing Machine Co., additions and alterations to building, $30,000.

MIAMI — Robert Ernst, Inc., warehouse and showroom, $23,000.

MIAMI — Munroe-Zeder, Inc., $88,000, garage and showroom.

MIAMI BEACH — Norman M. Giller, auto laundry.

ORLANDO — Allied Welding Co., $24,686.

PANAMA CITY — Alatex Corp., 20,000 sq. ft. plant for manufacture of men's shirts, $100,000.

PENSACOLA — Alley Glass Manufacturing Co., factory for manufacture of glass toys, marbles and other novelties.

RUSKIN — Ruskin Vegtetable Coop, cold storage plant.

SARASOTA — Howard-Finney, garage and service station, $100,000.

SOUTH MIAMI—South Miami Coach Lines, Inc., bus terminal and garage, $30,000.

GEORGIA

Textile Mills Co., $1,000,000 factory for manufacture of "burnproof" ironing board covers.

ATLANTA — Dixie Plywood Co., $150,000, house and office buildings.

ATLANTA — Kraft Food Co., air conditioning building.

ATLANTA — Atlanta Dairies Cooperative, $76,893, addition to building.

ATLANTA—Sparks Specialty Co., remodeling 3-story building.

ATLANTA — Georgia Power Co., garage.

ATLANTA—Huber & Huber Motor Freight Lines, warehouse and office building.

ATLANTA—Atlanta Royal Crown Bottling Co., $100,000, bottling equipment

COVINGTON — Snapping Shoals Electric Membership Corp., improvements, completion of previously approved construction and 45 miles of line; $205,000.

DALTON — Redwine & Strain, Inc., tufted textile plant.

EAST POINT — East Point Chevrolet Dealer, Inc., service and sales plant.

GRIFFIN — Ed Smith Motor Co., garage building.

LaGRANGE — Daniel Lumber Co., rebuilding mill, work shop and planing mill, $50,000.

MACON — Binswange & Co., Inc., warehouse.

MACON — Atlanta Gas Light Co., $60,000 service building.

New and Expanding Plants Reported:

October—294

The Year 1947 to date—2668

MARIETTA — Shamrock Knitting Mill., enlarge plant.

MOULTRIE — Colquitt County Rural Electric Co., $175,000 system improvements.

PALMETTO — Palmetto Cotton Mills, addition to present mill.

ROYSTON — Textron Inc., building for manufacturing operations.

SAVANNAH — Dearing Chevrolet Co., auto sales and service building.

THOMASVILLE — Southern Dog Food Co., dog food manufacturing plant, $100,000.

VALDOSTA — Strickland Cotton Mills., addition to Cotton mill.

KENTUCKY

LOUISVILLE — Ballard & Ballard Co., prepared feed mixing plant, flour bulk storage and packaging plant.

LOUISVILLE — Southern Bell Telephone & Telegraph Co. Cherokee exchange building.

PRICE — Inland Steel Co., coal cleaning plant.

LOUISIANA

BATON ROUGE — Rock Ice Co., plant building.

BOGALUSA — Merchants Co., $100,000 plant.

BOGALUSA — Louisiana Tung Mill, Inc., six or seven buildings and installation of the machinery; $100,000.

CROWLEY — Crowley Farm Equipment, building $75,000.

EUNICE — Kelly-Weber and Co., Inc., $150,000 fertilizer plant.

JENNINGS — Zigler Motors, commercial building.

KROTZ SPRINGS — Mayor and Board of Alderman, St. Landry Parish, natural gas transmission and distribution system.

LAKE CHARLES — Ed. Tassig, $25,000 repair shop addition to Ford Agency Building.

NATCHITOCHES — Valley Electric Membership Corp., clearing 166 miles of right of way for lines.

NEW ORLEANS — New Orleans Public Service, Inc., cleaning and painting building.

NEW ORLEANS — Hudson Mid-Town Motors, remodeling brick auto sales building.

NEW ORLEANS — Schott & Co., Inc., $27,000 addition to existing building.

NEW ORLEANS — Charles DeRouen, $42,993 factory building.

NEW ORLEANS — Ware Cotton Batting Co., plant building, $125,000.

NEW ORLEANS — Lyman C. Reed, extension to manufacturing plant, $40,000.

NEW ORLEANS — Jackson Brewing Co., building.

NEW ORLEANS — Texas and Pacific Railway Co., railroad freight terminal, $2,000,000.

NEW ORLEANS — Coca Cola Bottling Plant.

OPELOUSAS — Dominique's Packing & Rendering Plant, $125,828, building.

SHREVEPORT — United Gas Pipe Line Co., $1,730,000 pipe line project.

SHREVEPORT — United Gas Corp., office building annex, $700,000.

SHREVEPORT — Blue Grass Liquor Co., $42,940, warehouse building.

SHREVEPORT — T & P Railway Co., motor garage building, $45,000.

TENAHA — Tenaha Construction Supply Co., rebuilding burned planing mill.

WEST MONROE — W. R. Hatchell, building for West Monroe Post Office.

WINNFIELD — Winn Motor Co., garage building.

MARYLAND

ANNAPOLIS—Anne Arundel Farm Cooperative, Inc., cold storage locker and processing plant.

ANNE ARUNDEL COUNTY — American Oil Co., engine testing laboratory.

BALTIMORE — Chesapeake & Potomac Telephone Co., building alterations, $1,500,000.

BALTIMORE — Chesapeake and Potomac Co., $2,727,000 central office equipment, $80,900, central office, two, experimental radio television systems and extensions to telephone facilities.

BALTIMORE — General Steel Products Corp., industrial building and office, $25,000.

BALTIMORE — Harry Klaff & Co., storage building, $15,000.

BALTIMORE—Frederick J. Romeo, building, $10,000.

BALTIMORE—Weil & Scott Brothers, Inc., garage building.

BALTIMORE—H. L. Carrrr, warehouse and office building, $125,000.

BALTIMORE — Baltimore Trotting Races, Inc., $1,000,000 harness racing track.

BALTIMORE—Robert J. Welsman, storage building, $10,000.

BALTIMORE—Pennsylvania Railroad, escalator, $75,000.

BALTIMORE—Monarch Rubber Co., warehouse, $12,000.

BALTIMORE — Lord Baltimore Filling Stations, Inc., service stations.

BALTIMORE—Anderson Motor Co., addition to building.

BALTIMORE—W. B. Cassell Co., loading platform, $10,000.

BALTIMORE—Belvedere Broadcasting Co., transmission building and offices, $21,500.

BALTIMORE—Good Humor Ice Cream Co., processing and locker rooms, $20,000.

BALTIMORE—Locke Insulator Corp., $367,000 improvement program.

BALTIMORE—W. E. Bickerton Construction Co., Inc., office building, Corkran Hill & Co.

BALTIMORE — Maryland Steel Products Co., office building.

BALTIMORE—Regina Riley, Eastern Ave. and Walkern Road, addition to building, $57,000.

BALTIMORE — Heatmasters, Inc., plant, fabrication of boilers.

BALTIMORE—Corkran Hill & Co., office building.

BALTIMORE — Globe Brewing Co., brew

(Continued on next page)

NEW AND EXPANDING PLANTS

(Continued from preceding page)

house.

BALTIMORE—W. J. Dahle & Son, foundry.

BALTIMORE — Menhaden Fish Products Co., addition, to be used as additional cooling space.

BALTIMORE—A. S. Abell Co., modern publishing plant.

BALTIMORE—Baltimore & Ohio Railroad Co., gear storage building, Locust Point.

BALTIMORE—Shell Oil Co., service station.

BALTIMORE — Consolidated Gas, Electric Light and Power Co., storage building, $20,000.

BALTIMORE — Sheet Metal Fabricators, Inc., office building and shop.

BALTIMORE—Globe Brewing Co., alterations to brew house, addition to garage.

BALTIMORE—Coca Cola Co., building addition for storage rooms, $25,000.

BALTIMORE—James J. Keeck, addition to building, $15,000.

BALTIMORE COUNTY—Sherwood Brothers, Inc., service station, $21,000.

BALTIMORE COUNTY—Sherwood Brothers, Inc., 2,000 gallon tanks and 550 gallon tanks, $20,000.

BALTIMORE COUNTY—Chesapeake & Potomac Telephone Co., telephone exchange office, $10,000.

SPARROWS POINT — Bethlehem Steel Co., fuel oil storage building, chimney No. 8 for coke ovens, railroad track bridge, railroad bridge; 19 towers; fuel oil tank, $,500.

SPARROWS POINT — Bethlehem Steel Co., service building, $29,000.

WALDORF — Southern Maryland Electric Coop., Inc., Rural Electric Association Project.

MISSISSIPPI

LEAKSVILLE — Board of Supervisors of Green County, $103,233, garment plant.

VICKSBURG — Emmich Brothers, warehouse building containing garage, office and loading platforms.

MISSOURI

FARMINGTON — Chamber of Commerce, addition to shoe factory, $42,500.

JEFFERSON CITY — Al Scheppers, repair shop for autos, $13,000.

KANSAS CITY — Carter-Waters Corp., concrete block plant.

POPLAR BLUFF — Arkansas-Missouri Power Co., $6,000,000 generating plant.

ST. LOUIS — Evans-Howard Sewer Pipe Co., removing 4th floor and constructing roof.

ST. LOUIS—Mallinckrodt Chemical Works, boiler house, $70,000.

ST. LOUIS — National City Lines, bus terminal and remodeling office building.

ST. LOUIS — Meier Pohlman Furniture Co., warehouse addition, $14,000.

ST. LOUIS — Modern Metal Fabricators, factory, $20,000.

ST. LOUIS — Griesedieck Brothers Brewery Co., boiler house.

ST. LOUIS — Union Electric Co., modernizing steam plant, $730,000.

ST. LOUIS — Warner-Jenkinson Manufacturing Co., additions and alterations to factory, $35,000.

ST. LOUIS — Walter Bellm, truck terminal and warehouse, $12,000.

ST. LOUIS — Anheuser-Busch, Inc., retaining wall, $20,000.

ST. LOUIS — Lincoln Engineering Co., warehouse.

ST. LOUIS — Jack Chorney, auto sales and service building, $20,000.

ST. LOUIS — Wurdack Chemical & Paint Co., factory, $65,000.

ST. LOUIS — Denver Chicago Trucking Co., truck terminal and office, $100,000.

ST. LOUIS—Ray Rixman, Inc., auto sales room and garage, $65,000.

ST. LOUIS—Monsanto Chemical Co., steam power plant, $250,000.

ST. LOUIS — Loose Leaf Metal Co., office addition.

ST. LOUIS—Parke-Davis & Co., warehouse.

ST. LOUIS—Moloney Electric Co., addition to factory, $150,000.

ST. LOUIS—Wick Furniture Co., addition to warehouse.

ST. LOUIS—Irvin Goffstein, storage building, $10,000.

ST. LOUIS — Ralston-Purina Co., repairs to 3-story office and warehouse, $10,000.

ST. LOUIS—Wuestling Packing Co., addition to packing plant, cooler room, $70,000.

ST. LOUIS — Axelson Manufacturing Co., addition to warehouse, $16,000.

ST. LOUIS—St. Louis Dairy Co., altering hardening room, $15,000.

ST. LOUIS—E. H. Baare Manufacturing Co., addition to warehouse, $20,000.

ST. LOUIS — Eliz M. Kinamore, office building, $30,000.

NORTH CAROLINA

BUXTON — Cape Hatteras Electric Membership Corp., $30,113.

CHARLOTTE — Dolan Motor Co., building.

CHARLOTTE—City, $162,051, revamping of city's electric system.

CHARLOTTE — Atkinson-Norfleet, Inc., $100,000 expansion program, passenger car service building, 60-foot addition to truck service department, loading dock.

DURHAM—Carolina Glass Co., warehouse and shop, $22,000.

ECHOLS—Kemp Investment Co., $250,000, railway mail terminal.

ENFIELD — Halifax Electric Corp., 179.2 miles of REA lines.

FOREST CITY — Rutherford Electric Membership Corp., $53,969, project, North Carolina 25M Rutherford, REA.

GREENSBORO—Plant, Guilford Dairy Co-Operative Association, $350,000.

HICKORY — Alterations and additions to building for Ivey Weavers, Inc.

HIGH POINT—Power Commission, hydroelectric plant, $10,000,000.

HIGH POINT — Southern Railway System, passenger station, $10,000.

MORGANTON—W. R. Mullis, garage building.

RALEIGH — C. W. Smith & F. Faucett, service station, $20,000.

ROANOKE RAPIDS — Rosemary Manufacturing Co., reroofing two buildings.

ROCK HILL—Rock Hill Telephone Co., Inc., expansion and modernization program, $450,000.

SALISBURY — Carolina Tractor & Equipment, building.

SALISBURY — Rowan Co-Operative Dairy, $200,000 dairy.

SPINDALE—Farmers' Federation, freezerlocker plant, $50,000.

TARBORO — Edgecombe-Martin Electric Membership Corp., $51,500, headquarters building.

WAYNESVILLE — Haywood Electric Membership Corp., $41,062, REA Project, N. C., 10K Haywood, Section 1.

WILMINGTON—Atlantic Coast Line Railway, central heating system for offices and shop buildings.

WILSON—City power plant improvements.

WINSTON-SALEM — Coca-Cola Bottling Co., addition to present office building, $12,000.

WINSTON-SALEM — Charles C. Smith, public garage.

WINSTON-SALEM — Norfolk and Western Railway Co., engine terminal

OKLAHOMA

HOLLIS — Harmon Electric Association, $272,000, 125 miles of line.

LAWTON — Carl C. Sapshaw, building to house auto spring factory, $16,000.

OKLAHOMA CITY — Oklahoma Gas & Electric Co., $3,500,000, construction program.

OKMULGEE — American Window Glass Co., dismantling of old buildings and minor repairs necessary to put remaining buildings in usable condition, No. 3 factory.

TULSA — Public Service Co. of Oklahoma, underground facilities, $1,300,000.

TULSA—E. I. du Pont de Nemours, remodeling two-story building, $40,000.

TULSA—A. D. Strahm, auto park building, $200,000.

TULSA—Public Service Co. of Oklahoma, $5,000,000; plan rebuilding program to $500,000 and improvements to power plant.

TULSA—LeRoi Co., building.

SOUTH CAROLINA

BAMBERG — Edisto Electric Cooperative, Inc., $29,663, 96 miles of lines.

CHARLESTON — News and Courier and Charleston Evening Post, expansion.

CONWAY — MYRTLE BEACH — South Carolina Public Service Authority, $51,958, transmission lines.

EDGEFIELD — Edgefield Industrial Development Corp., $62,525, construction, complete with heating system and sprinkler system.

GREENVILLE — Nehi Bottling Co., $106,353, bottling plant.

GREER — Greer Concrete and Block Co., plant for manufacture of cement construction block, $35,000.

MONCKS CORNER — South Carolina Public Service Authority, garage and repair shop.

MONCKS CORNER — Berkeley Electric Cooperative, Inc., 81 miles electrical distribution lines.

NEWBERRY — Newberry Electric Cooperative, Inc., 83.2 miles of length and located in Newberry and Lexington Counties.

PICKENS — Pickens Industrial Development Corp., $60,000 factory building.

TENNESSEE

ATHENS — Twin County Frozen Food Locker, locker plant.

CHATTANOOGA — Terminal Authority Board, Central Railroad Terminal, $10,000,000.

CROSSVILLE—O. P. Link Handle Co., rebuilding plant destroyed by fire.

DEL RIO—Tennessee Mining Co., washing and grinding plant.

ELIZABETHTON — North American Rayon Corp., $6,500,000 rehabilitation and expansion program.

KINGSPORT — Tennessee Eastman Corp., bus terminal, storage garage and 2 bus stop sheds, $20,000.

KNOXVILLE — Kraft Foods, warehouse building, $112,000.

KNOXVILLE — Ryan Cigar Co., warehouse $25,000.

KNOXVILLE—Royal Crown Bottling Co. $100,000 bottling plant and $50,000 warehouse.

KNOXVILLE — Cherokee Textile Mills, addition to plant, $50,000.

LOUDON—Charles H. Bacon Co., $2,000,000 expansion.

MEMPHIS — Chuck Hutton Co., retail and wholesale parts warehouse and truck shop building, $100,000.

MEMPHIS — General Dry Batteries, Inc., plant.

MEMPHIS — GMC Truck & Coach Division, office and warehouse, $165,000.

MEMPHIS — Oliver Corp., branch headquarters.

MT. PLEASANT — Victor Chemical Works, additional buildings and expansion of facilities of plant, $1,500,000.

NASHVILLE — Methodist Publishing House, addition to printing plant and construction of office tower, $1,200,000.

NASHVILLE — T. L. Herbert & Sons, 3 storage garage buildings, $42,000.

NASHVILLE — May Hosiery Mills, $150,000 addition.

NASHVILLE — Ferro Enamel Corp., clay plant and gravity tank, $40,000.

NASHVILLE — Southern Bell Telephone & Telegraph Co., office building, $750,000.

NASHVILLE — King-Nash Motor Co., auto sales building, $50,000.

NASHVILLE — Capitol News Co., warehouse and office building, $12,000.

ROCKWOOD — Rockwood Electric Utility, modern building.

TEXAS

United Gas Pipe Line Co., 32.17 miles of 20-inch line including multiple submarine crossing.

Champion Paper and Fibre Co., paper mill.

BEAUMONT — Gulf States Utilities Co., construction program, $9,000,000.

BEAUMONT — Southwestern Bell Telephone Co., building addition.

BEAUMONT — Carnation Milk Co., milk plant.

BISHOP — Celanese Corp., office building.

BRADY — McCulloch County Electric Cooperative, $200,000, 160 miles of REA lines.

BROWNSVILLE — Southwestern Bell Telephone Co., central office building, alterations and additions.

BROWNSVILLE — Carthage Hydrocol, Inc., Hydrocol plant.

CLEBURNE — Johnson County Electric Cooperative Association, $175,000, REA system improvements.

COLEMAN — City, municipal electric system improvements.

CORPUS CHRISTI — Southwestern Bell Telephone Co., addition and alterations to building.

DALLAS — Brooklyn Building Co., addition to present building, $41,000.

DALLAS — Russell Milling Co., flour storage and packing building, $200,000.

DALLAS — construction work, Lorch-Westway Manufacturing Co.

DALLAS — Wall Street Journal, publishing plant.

DALLAS — E. L. Dalton, 625 h.p. boiler and install one 625 h.p. boiler, removing present boiler, $28,000.

DALLAS — Peter Paul, Inc., addition to present factory building, $25,000.

DENISON — Kraft Foods Co., enlargement of plant.

DENISON — Southwestern Bell Telephone Co., addition to rear of present building.

FLATONIA — Groce-Wearden Co., Inc., addition to warehouse, Ed. Wagner, $27,119.

FORT WORTH — H. T. Bibb Co., feed mill.

FORT WORTH — Texas Manufacturing Co., warehouse addition.

FORT WORTH — Texas Electric Service Co., construction program, $21,000,000.

FORT WORTH — Ernest Allen Motor Co., automobile repair, storage and show room space.

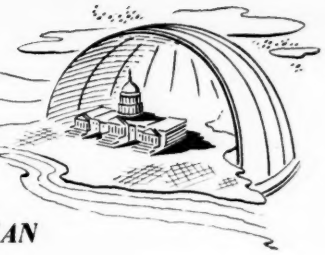
FORT WORTH — Leonard Brothers sales and warehouse.

FORT WORTH — Fakes & Co., addition and air-conditioning, $67,000.

FRANKLIN — Robertson County Electric

(Continued on page 72)

Potomac Soundings



by LAWRENCE SULLIVAN

War Talk Unfounded

In America's new policy of firmness toward Moscow's big talk there is more than meets the eye of the lay observer.

That's why Washington regards today's war talk as mere gibberish.

From the economic standpoint, Russia is no more prepared for a diplomatic break with the United States than is China or India. That is the fundamental consideration which guides Russian policy as she approaches the Big Four foreign ministers' conference, scheduled to resume in London on November 25. That conference will pick up the broken pieces of the Paris conference of last March, on the German and Austrian peace treaties. Russia will swagger, bluster, and fume; but her internal economic position does not permit her to risk a diplomatic showdown with the U. S., Britain and the Western Powers. The Red tide already has been turned back in Italy, France, Greece, Turkey, and Iran—the points at which Moscow put forth its most titanic penetration offensives. Even in Hollywood, Communism is in increasing bad odor.

The revised appraisal of Russia's military and diplomatic potential follows the October visits here of General Walter Bedell Smith, U. S. ambassador to Moscow, General Lucius D. Clay, American Occupation Commander in Germany, and Lewis W. Douglas, our Ambassador to London. All have now returned to their posts to prepare for the London conference.

The Kremlin's propaganda offensive since the German collapse in May, 1945, has been directed to a single objective—to implant the mass impression in America and England that Russia is a modern first-class power. While that propaganda line has been remarkably successful in some areas of American opinion, the facts behind the propaganda are well known to our military men. And foremost among these, of course, is the former wartime Chief of Staff, George C. Marshall, now Secretary of State. Both Generals Clay and Smith likewise were key figures in the U. S. military offensive in Europe during the war. They entered their present diplomatic assignments with a firm grasp of Russia's military power as it might have been appraised without the still unmeasured assistance of Lend-lease.

From the economic standpoint, Russia is a *papier-mache* state, lacking coal, oil, steel, chemicals, electric power and food sufficient for even routine peacetime operations. From a military standpoint, Russia is a swaggering, tinsel buffoon, much as was Japan in the glory days of her "expansionism" before Pearl Harbor.

Since V-E Day Russia has accomplished a considerable expansion in Poland, Yugoslavia, Hungary, Albania, Austria, Lithuania, Estonia, Latvia, Korea and Manchuria. But this has been entirely a process of plunder, with the invaders taking little more than daily subsistence from the land. The conquest has been barely self-sustaining, certainly not profitable.

Today, Russia's oil resources, as measured in refinery capacity, give her in an entire year about the amount of petroleum products the U. S. consumes every 45 days.

Per capita consumption of all goods in Russia now measures approximately $111 a year (as valued in 1940 U. S. prices), while our own consumption averages $1,300 per capita on the same basis of values.

With a population exceeding 200,000,000, exclusive of the European territory overrun by the Kremlin since V-E Day, Russia's combined annual production of all items amounts to a little less than one-third of the U. S. total. The picture, then, is 200,000,000 Russians prospering on one-third the total goods available for 140,000,000 Americans. That picture fairly represents the economic striking power of the United Nations' pet, Bully Bear.

Russia's total national production in 1940 was roundly $32¼-billions (measured in 1940 U. S. dollars). Our own gross national product that year was roundly $100-billions.

Russian industry still operates at an efficiency level below that of 1913 as measured in productivity per man-hour of work. As recently as 1934, Russia's measurable productivity per man hour was only about two-thirds the 1913 figure.

In Russia today roughly one-third the total national production is skimmed off by the ruling bureaucracy, the military, and planning boards for "national investment," leaving only two-thirds, or about $22-billions a year (at 1940 U. S. prices) for the 190,000,000 "consumers" who are not in the ruling aristocracy of the Workers' Fatherland. Thirty years of Marxian ideology under the Soviet Czardom leaves 5 per cent of the population spending one-third of the annual production, while the remaining 95 per cent scramble under the rules of bureaucracy for the remaining two-thirds. Such is the illusion of socialism to which all of Europe is now urged by Moscow to yield its fortunes and its future.

There are many more authenticated figures exploding the myth of Russia as a first-class industrial and military power. Russia is, in fact, a seething ant-hill of enslaved humanity groping in a blinding maze of Kremlin police regulations—like a mass of flies on soft, gummy paper in the summer kitchen. The $12-billion she got in American lend-lease during the last five years gave her a semblance of solvency and well-being for the first time in modern history. The intoxicating illusion of prosperity thus achieved for themselves by the Kremlin bosses left them with a robust appetite for conquest and plunder. Never has business been so good for the Kremlin as since 1939, when the bosses began the ancient Oriental practice of working both sides of the street in Europe's age-old game of power politics. And never has the plight of the Russian people been more degraded, more tragic, more hopeless.

Viewed in terms of American moral, political and economic standards, Russia is a festering political cancer in the world's body politic. So long as the Kremlin Czardom prevails, the deadly power of internal self-consumption must go on. Phony statistics from the state bureaus will serve for a time to conceal the picture of black degeneration. But the lethal progress of the deep-rooted malady is unchecked; and in the end the tinsel and the big talk will fall into grim and ignominious ashes, with the strident Godlessness of all the ages of man since the Tower of Babel.

Feather-Bedding in Construction

The Labor Committee of the House has set up a special subcommittee to investigate charges that feather-bedding and make-work rules enforced by labor unions now add an extra twenty-five per cent to home construction costs in the metropolitan areas. A house which can be built for $8,000 in Milwaukee, for example, costs nearly $11,000 in Chicago.

The subcommittee is headed by Rep. Ralph W. Gwinn, of New York, with Wingate H. Lucas, of Texas, serving as the minority member. Ralph L. Himmelhoch, of Chicago, has been appointed counsel, to correlate facts and figures submitted by home buyers, contractors, architects, municipal bodies, and equipment manufacturers whose products often are excluded from important markets by union rules forbidding the use of labor-saving machinery and devices.

A preliminary questionnaire submitted to several thousand recent home buyers,

Potomac Soundings — *by Lawrence Sullivan*

veterans' organizations, apartment contractors, architects, labor organizations, and chambers of commerce, seeks detailed factual information of current significance covering extortion, intimidation, monopolistic practices, jurisdictional disputes, boycotts, and slow-downs. On the basis of this material, the committee will schedule a series of hearings across the country during November and December. Its report will be ready for the new session of Congress early in February.

"It has been estimated by reputable authorities in the construction industry that arbitrary restrictions on home building are adding about a billion dollars a year to dwelling costs throughout the Nation," Counsel Himmelhoch said. "Many of the unions forbid or sharply limit the use of labor-saving machinery and equipment. Other rules and regulations often compel the hiring of many more men than are actually needed for a given job. Some labor organizations even presume to dictate how much and what kind of materials may be used in a new house."

Chairman Gwinn emphasizes that the sub-committee is launched only upon a fact-finding inquiry calculated to expose such restrictive practices.

"This is not a prosecuting committee. We are not proceeding to indict anybody, but want to get at the facts."

Virtually every building craft employs various make-work devices which add materially to construction costs, according to reports returned on the committee's questionnaires. In many cities, union carpenters will not permit use of door-fitting machines; in other areas, they will not permit hanging of factory-fitted doors, windows and trim. Concrete forms must be stripped by high-priced journeyman carpenters, instead of by available unskilled labor. Doors and windows which are delivered with glass panels installed, must be placed with journeyman glaziers idly standing by at full time rates, although there is no work to do. In many cities, bricklayers and masons forbid the use of ready mixed concrete on small jobs, insisting that every ounce of mortar must be mixed on the site. Similar restrictive rules prevail in the contracts of painters, plasterers, electricians, plumbers, engineers, steel and iron workers, and stone masons.

The powerful drive of indignant veteran organizations is now behind the nation-wide crusade to eliminate all unnecessary costs in home construction. Typical of the resolutions reaching the Gwinn Committee is one from a Chicago post of the American Legion pledging support to "this timely and laudable effort to eliminate all racketeering, shake-downs, extortion, collusion, slow-downs, feather-bedding, and make-work rules which tend to limit or delay new construction in this area." This resolution continues with a demand that "every known labor saving device and every known time-saving and cost-reducing method be applied vigorously in every phase of home construction."

Throughout the Chicago area, many Legion posts have offered their services as temporary clearing houses through which affidavits covering make-work practices may be transmitted to the Gwinn Committee.

"Congress has set up this special investigating committee to expose all these unwholesome rules and practices to critical public examination in the light of today's urgent needs in housing," the Chicago veterans' resolution continues. "It is the duty of veterans to help Congress in that effort with every influence at their command."

Fairly representative of the mountains of material flooding in upon the Gwinn Committee is an affidavit from St. Louis covering a subdivision of 119 homes for veterans begun on June 30, 1945. Soon, the business agent of the Construction Trades Council called to demand a closed-shop contract on the project, which the builder refused. An A.F.L. picket line was established May 28, 1946, accompanied by a boycott which extended to A.F.L. employees of the local electric light company, with the result that "employees of Union Electric Co. of Missouri will not install utilities in his subdivsion until instructed by their union."

Between January, 1946, and February, 1947, this builder sold only one house in the entire project.

Instead of 119 occupied dwellings in this project, St. Louis has thirteen ready for occupancy—save for electrical connections.

Until this sort of unioneering is removed from the picture, say the Gwinn Committee investigators, the housing shortage may be perpetual.

Exploding the War Profiteer

Another favorite myth of the American Communists was exploded last month with publication by the Federal Trade Commission of profit statistics on 4,107 identical industrial concerns for the years 1941-45 inclusive. Twenty-one of twenty-two industrial classifications reported uniformly smaller profits in the war years 1942, '43, '44, and '45, as compared with 1941.

In the tabulation below, profits are reported, after all taxes, as a percentage of net worth invested in the business:

445 food manufacturers earned 9.7% in '41 and 7.3 in '45.

32 tobacco processors earned 11.6% in '41 and 8.2 in '45.

111 cotton textiles earned 13.4% in '41 and 6.8 in '45.

283 other textiles earned 11.5% in '41 and 8.2 in '45.

Other results in summary:

No.	*Class*	1941%	1945%
127	Apparel	11.9	7.9
152	Leather	11.4	7.1
61	Rubber	12.8	9.5
106	Lumber	7.4	5.2
194	Furniture	10.3	6.4
309	Paper	10.2	7.3
97	Publishing & Prtg.	10.3	9.9
308	Chemicals	12.8	9.3
48	Coal & Petroleum	10.0	7.6
591	Iron & Steel	12.7	5.6
178	Stone, Clay & Glass	11.8	5.1
94	Non-ferrous metals	12.7	5.5
104	Electrical machinery	14.0	9.7
475	Machine tools	14.6	7.7
81	Auto & Equipment	19.5	12.7
38	Transportation equipment	14.2	9.7
131	Miscellaneous	13.2	8.8

Of all the industrial classifications covered, only the softdrink group showed improved earnings for the war period, as measured in per cent return on net worth. For 144 beverage companies tabulated, consolidated net after taxes was 12.7% in 1941; 12.4% in '42; 13.9% in 1943; 12.8% in 1944, and 13% in 1945.

Strange indeed, that the Communist campaign against our American enterprise system can be based on the illusion of swollen war profits, when the exact figures, industry after industry, show precisely the opposite result. The fact is that only 144 companies out of 4,107 tabulated were able even to hold their prewar earnings percentages during the war years.

Such is the evil power of the Communist propaganda of smear and hate.

Regional Wage Differentials

Few industries can match the Southern Pine Committee in its presentation of the case against uniform, nation-wide minimum wages. Were every industrial group prepared to offer similar statistical tabulations, the Washington interest in uniform national wage standards soon would rest upon a sounder economic understanding.

The report shows that because of generally smaller timber and sparsity of the stand in the twelve Southern Pine States, the labor cost per unit of production is far in excess of competing areas in the West. Should Congress legislate the proposed 75-cent minimum wage next session, Southern production costs would tend to drive that area completely from the competitive lumber market.

Production of 1,000 board feet of lumber in the Southern Pine area requires between 15 and 18 man-hours of labor, whereas the Pacific Coast area can get out 1,000 board feet with only 8 man-hours. What happens when the two areas are forced to the same hourly wage rates?

"The Works Progress Administration established an elaborate schedule of wages which recognized geographical differentials. If our government recognized the economic necessity and justice of wide differentials in pay for comparable kinds and quantities of work performed in different sections of the country because of differences in living costs, then it is manifestly unfair, discriminatory and inconsistent for our government to legislate for the South uniform rates of pay with other sections of the Nation, when differences in living costs continue to exist between the respective areas.

"The South cannot grow under such unfair treatment accorded it by our national government. If the Wage-Hour Law must be kept alive, its minimum

(*Continued on page* 174)

THE NATIONAL CITY BANK
OF NEW YORK

1812 — 135th ANNIVERSARY — 1947

Head Office · 55 WALL STREET · *New York*

Condensed Statement of Condition as of September 30, 1947

Including Domestic and Foreign Branches But Not Including The Affiliated City Bank Farmers Trust Company

(In Dollars Only—Cents Omitted)

ASSETS

Cash and Due from Banks	$1,208,876,854
United States Government Obligations (Direct or Fully Guaranteed)	2,183,146,029
Obligations of Other Federal Agencies	30,529,300
State and Municipal Securities	244,767,711
Other Securities	78,798,334
Loans, Discounts, and Bankers' Acceptances	1,144,278,147
Real Estate Loans and Securities	2,955,770
Customers' Liability for Acceptances	18,039,851
Stock in Federal Reserve Bank	6,900,000
Ownership of International Banking Corporation	7,000,000
Bank Premises	28,714,293
Other Assets	3,409,828
Total	$4,957,416,117

LIABILITIES

Deposits (Includes United States War Loan Deposit $27,896,868)		$4,622,164,738
Liability on Acceptances and Bills	$31,397,641	
Less: Own Acceptances in Portfolio	12,056,091	19,341,550
Items in Transit with Branches		5,747,315
Reserves for:		
Unearned Discount and Other Unearned Income		5,231,674
Interest, Taxes, Other Accrued Expenses, etc.		34,345,337
Dividend		2,325,000
Capital	$77,500,000	
Surplus	152,500,000	
Undivided Profits	38,260,503	268,260,503
Total		$4,957,416,117

Figures of Foreign Branches are as of September 25, 1947.

$273,436,706 of United States Government Obligations and $3,396,013 of other assets are deposited to secure $206,640,344 of Public and Trust Deposits and for other purposes required or permitted by law.

(Member Federal Deposit Insurance Corporation)

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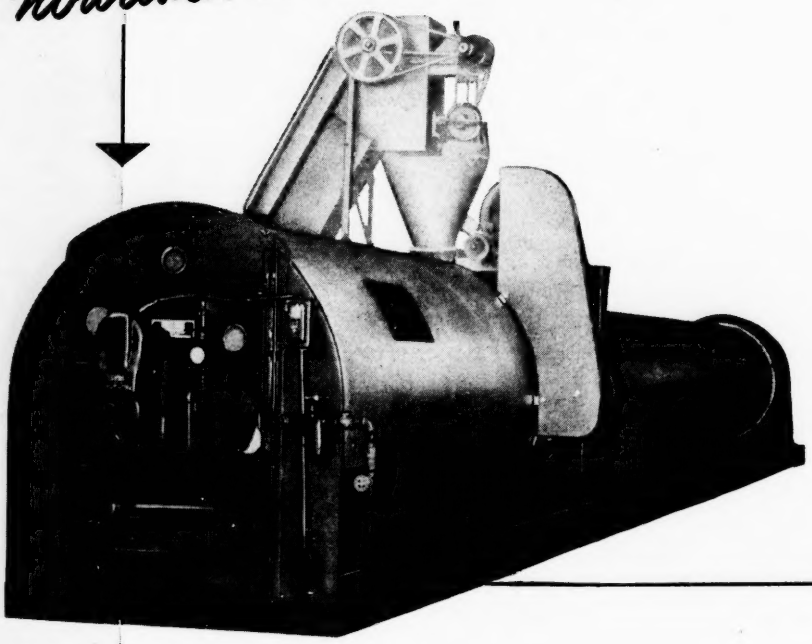
A MACHINE TO FEED LIVESTOCK

nourishes a new industry!



U·S·S STEEL PRODUCTS MADE OR DISTRIBUTED BY T.C.I. INCLUDE:

- Rolled, forged and drawn steel products.
- Structural shapes, plates, bars, small shapes, agricultural shapes, tool steel, strip, floor plate, cotton ties.
- Steel sheet piling and H-bearing piles, bridge flooring.
- Concrete reinforcing bars, reinforcing mesh.
- Black, galvanized and special finish sheets.
- Galvanized roofing and siding.
- Wire and wire products, including woven wire fencing, barbed wire, bale ties, nails.
- Electrical wires and cables, wire rope, strand.
- Rails, track accessories, wheels, axles, forgings.
- Culverts.
- U·S·S High Strength Steels and U·S·S Abrasion-Resisting Steels.
- U·S·S Stainless Steel.
- Ground Open Hearth Basic Slag.

THE dehydrator shown above was originally designed to remove the moisture from sweet potatoes so that they could be used as feed for livestock. So successful was this sweet potato dehydrator in providing low cost, high carbohydrate livestock feed that ingenious businessmen began to use it on other products.

A pineapple canner now saves "waste" fruit . . . fishermen no longer discard "trash" fish found in their nets . . . celery leaves and tops are set aside by vegetable packers . . . shrimp heads and trimmings are gathered up by fish processors . . . spent grains from breweries are collected . . . all these diverse products, formerly wasted, are dehydrated and fed to cattle. The dehydrator is creating new wealth from waste.

Attachments have been designed for the dehydrator which permit the dehydration of hay, and it is expected that the dehydrator will move out of the traditional sweet potato belt into other southern regions to provide better feed for southern cattle and help the livestock farmer to produce better meat and milk at lower prices. And a grain and seed dryer is now being developed to satisfy other agricultural needs.

This Story of the Dehydrator illustrates two points in which we at T.C.I. have always believed. *1. Agriculture is the basis of southern wealth,* and *2. A proper balance between agriculture and industry will develop both to their highest productivity,* providing better business opportunities, better jobs and a higher standard of living for all Southerners. Whatever helps southern agriculture helps all southern business.

TENNESSEE COAL, IRON & RAILROAD COMPANY

General Offices: *Birmingham, Alabama*
District Offices: Birmingham · Charlotte · Houston · Jacksonville
Memphis · New Orleans · Tulsa
United States Steel Export Company, New York

UNITED STATES STEEL

LITTLE GRAINS OF SAND

"Little drops of water, little grains of sand,
Make the mighty ocean, and the pleasant land."

"Carrying coals to Newcastle." What one of us oldsters was not taught that saying as exemplifying the essence of futility? But times change, and since the socialists now own British coal mines, we can no longer quote this age-old fable to our grandchildren. We are not only shipping coal continuously to England but we have actually shipped an 8,000-ton cargo of coal from Baltimore to Newcastle-Upon-Tyne.

We wonder whether some day Senator Pepper's idea will so dominate the great state of Florida that it will find it necessary to import oranges from California.

Let's be honest with each other in our talk about European aid. Are we asked to give charity to help people in dire need, or are we being urged to stick our thumbs in Europe's fragile dyke to temporarily restrain the feared flood of communism? In either case the horizon of our national beneficence should be lifted to include China. At any rate, to quote Thurman Sensing, "If we are to continue pouring out money and food and materials all over the face of the globe, we at least need to know why we are doing it. If it's charity, it should be handled on a humanitarian basis. If it's blackmail—well, the American people don't scare easily."

Before considering the urgent subject of helping destitute Europe, our government, in estimating the burden necessary to be placed on the backs of the taxpayers, should thoroughly investigate the hidden mine of dollars held concealed by foreigners in investments in this and other countries, in gold in Switzerland and in actual hoards at home. Some United States officials privately express the opinion that there are several billion dollars worth of "hard" wealth figuratively concealed in French stockings.

The gold held by our government at Fort Knox or elsewhere is not morally the property of the United States Government. It is merely held by our government as security supporting pieces of paper (known as currency) and for other acknowledged obligations. One of these other obligations is to meet any demands, at any time that may be made upon us by foreign nations that hold reserves exchangeable in gold in our country. Every crumpled dollar bill in circulation has an indirect lien on all but a minor part of this gold reserve. Federal Reserve gold certificates have a more direct lien. This gold belongs to each and every one of us. It is not a pawn in government's hands in an international chess game.

When you read that "part of every dollar you get comes from foreign trade" get out the old salt cellar and take a few grains. The truth is that, at present, part of every dollar you get goes to pay for foreign trade. Unless the value of imports and exports eventually balance, the excess of exports are gifts, not sales. The deception of propaganda to make people believe that these excessive exports are profitable trade, providing increased employment, is pure balogna; actually as taxpayers we must pay for the excess exports. For when Government loans the money abroad, it must collect it from its own citizens as taxes or burden them with it as debt.

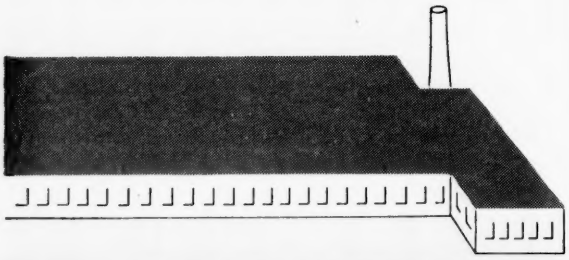
In the past we taught our people that it was foolish to place our faith in managed economies by saying "you can't do business" with Hitler. The tune has now changed to "you can't do business" with Stalin. How can we arouse public consciousness to just the bald truth that "you can't do business" with any managed economy and that it is just as foolish to try to do so with fools as with knaves. Little men in high places, dismembering a great commonwealth of nations and ignorantly uprooting the fruitful tree of free enterprise that took centuries to reach its growth are not good business risks. Maybe they should be pitied, but should they be aided in their attempt to enmesh our British cousins in the toils of state slavery?

At present there is no such thing as collective bargaining. It is one s i d e d bludgeoning. Monopolistic labor, egged on by government demagogues, compels competitive industry to yield to its overwhelming force. The inevitable result is that every man and woman in the land pays tribute to the monstrosity they have nurtured in higher and ever higher prices.

The Southern Conference of Human Welfare (a name that reminds us of Octavius Roy Cohen's creation "The Sons and Daughters of I Will Arise") is an organization, which according to a recent statement by its president, is not interested in whether its members are communists or not, has recently moved its germ of foment (they call it headquarters) from Nashville to New Orleans. Self-respecting Louisianians quite properly treat this social excrescence as an unfriendly and unwelcome alien and, because of their local pride and patriotic attitude, are accused by New York's Harlem and its exploiters of intolerance. Theirs is not a question of tolerance or intolerance. Decent people do not tolerate national disloyalty or mental chicanery. They shun them. Our editorial hat is off to New Orleans. May they freeze out the viper's nest.

(*Continued on page* 26)

ROOM AND RESOURCES



FOR INDUSTRY

Several excellent industrial sites are now available in Columbia, South Carolina—at the heart of an area rich in raw materials.

TIMBER: The entire State is 55% covered; CROPS: large surpluses available for packing, processing; MINERALS: clay, granite, sand in abundance for construction purposes; ELECTRIC POWER: ample for large-scale developments.

LABOR: Plentiful and skilled.

COSTS LOWER, PROFITS HIGHER: Columbia is just overnight from major eastern markets, affording maximum ease of distribution over four railroads. Building and operating costs are lower—profits are higher.

The Industrial Service Bureau, working for you with the community, will compile and submit to you detailed data on sites, land costs, facilities, etc., without obligation. Call on us for real and lasting cooperation on any local participation you may desire.

• Write, wire or telephone to:

INDUSTRIAL SERVICE BUREAU

Dept. M P. O. Box 1405

Liberty Life Building • Columbia, S.C. • Telephone 4-1026

COLUMBIA

SOUTH CAROLINA

(*Continued from page* 25)

Corporations seeking new capital are entirely too dependent today on institutions as sources of funds. These are now providing the great bulk of the capital being raised by private enterprise. This is far from a healthy situation. In its place should be a revival of a market for corporate securities among individual investors.

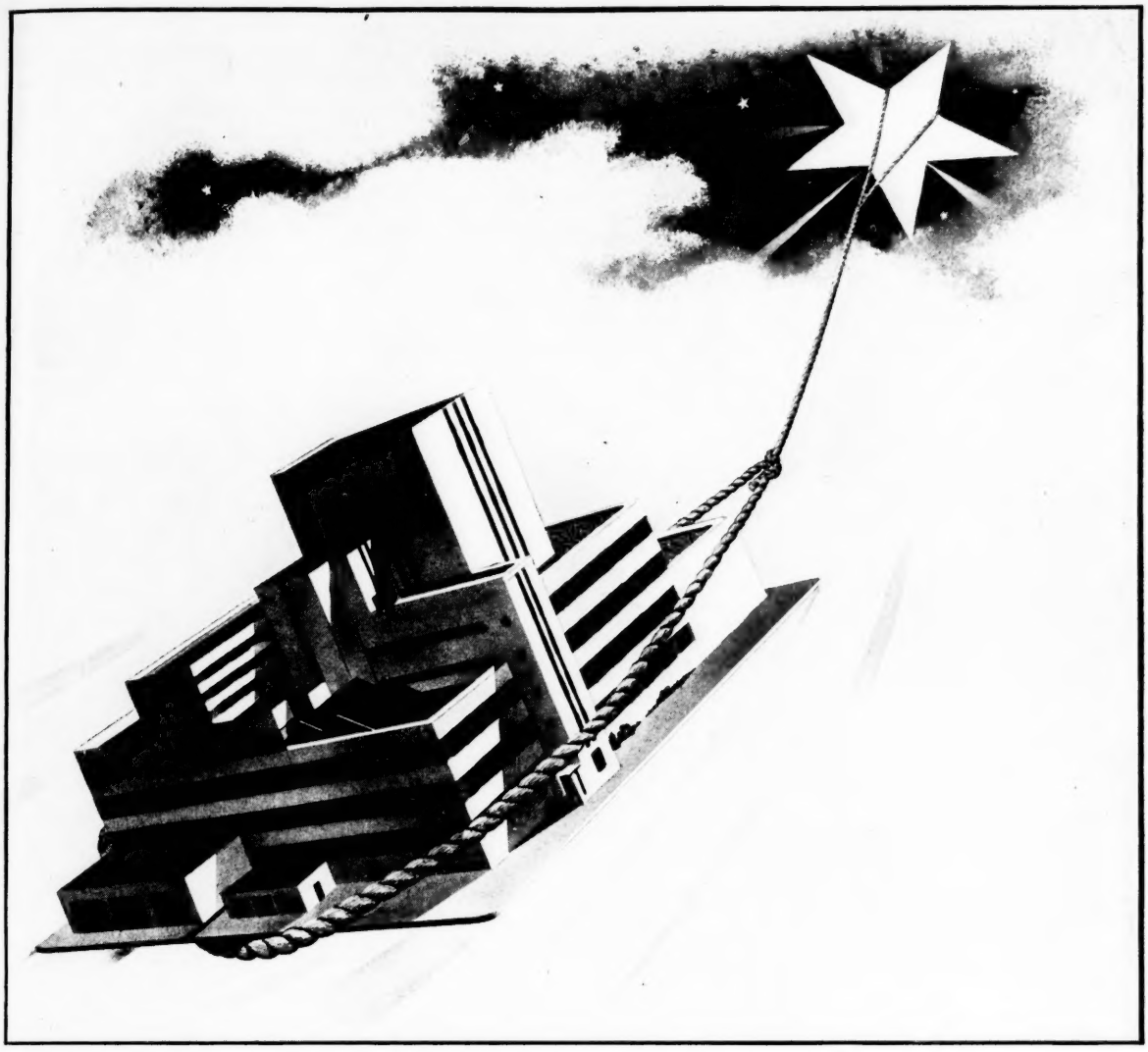
There are many factors that can be blamed for the unwillingness of private investors to supply the needed venture money to private enterprise. President Schram of the New York Stock Exchange when recently discussing this situation held that excessive income taxes that absorb the bulk of the income from persons in the higher tax brackets, double taxation of corporate income when distributed as dividends and unnecessarily high margin requirements on the markets were chiefly responsible.

The following serves as an interesting example of progress under the free enterprise system: Forty years ago an automobile tire worker received 40 cents an hour while the price of the tire he built was $35 and could not be expected to give more than 2,000 miles of service. Then one hour's work was equivalent in value to 23 miles of tire service. Today the tire worker's average hourly rate is $1.63, price of the tire to consumer $14.40 and it can be expected to give an average of 34,000 miles of service. Now one hour's work is equivalent in value to 3,800 miles of tire service.

In the first of a series of articles prepared from material gathered by building industry specialists the *Wall Street Journal* makes the following startling statement: "One billion dollars. That is a conservative calculation of the toll for sheer waste the building industry will exact from American home buyers in 1947. It means about every fifth dollar spent for new housing this year will be thrown away on make-work and shirk-work labor practices, on horse-and-buggy business practices and on obsolete requirements of building laws. Translate this into figures for a family budget: A home costing, say, $10,000 today should be built in most cities for between $7,500 and $8,500. This could be done without cutting workmen's pay rates a cent or reducing the manufacturer's price of any item of building material."

Several cases in which the constitutionality of the Taft-Hartley Act has been questioned have come before various courts, both federal and state. Uniformly, each court has held the Taft-Hartley Act to be a perfectly valid exercise of Congressional power, and generally on two grounds. One has been that the law did not take away any vested rights, but merely statutory rights previously granted by Congress, and so subject to withdrawal. The other has been that Congress was fully within its rights in withdrawing court

(*Continued on page* 28)



Hitch your Factory to the Southern Star

Hitch your factory to this fast-rising industrial star . . . the South! Then watch its upward curve.

For in this land of opportunity, served by the 8,000-mile Southern Railway System, you don't have to be an astronomer to discover new peaks of growth and prosperity for your business.

For here it will have abundant nearby raw materials, favorable climate, great and growing consumer markets . . . *every* economic advantage it needs.

Join the thousands of other far-sighted industrialists who have hitched their factories to the Southern Star. *"Look Ahead—Look South!"*

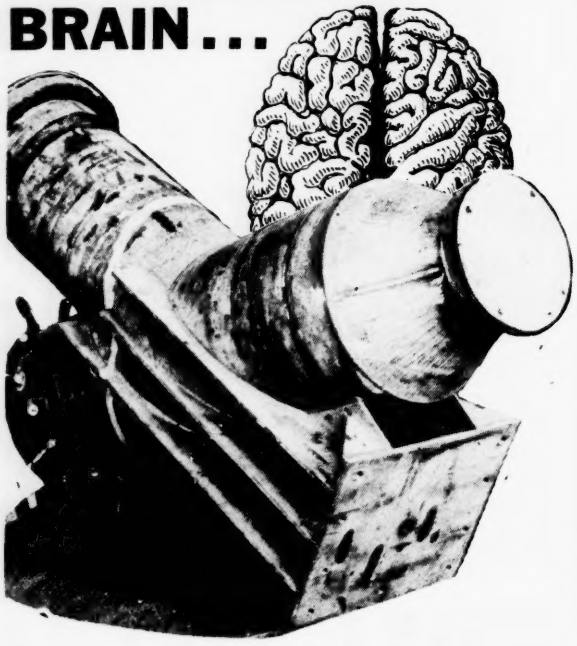
Ernest E. Norris
President

LOOK SOUTH LOOK AHEAD

SOUTHERN RAILWAY SYSTEM

The Southern Serves the South

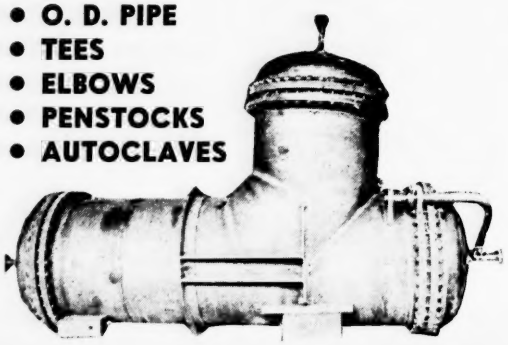
HOW MUCH BRAIN...



per FOOT of PIPE?

When you're buying pipe, the question to ask is "How much brain per foot?" How much *practical* engineering knowledge backs up design and construction? Then answer your questions by turning to Lancaster—pipe-makers with the long experience which assures you of pipe that isn't just hollow tubing . . . but equipment designed to fit the exact requirements of your job. Free consultation service . . . write today for detailed information.

- O. D. PIPE
- TEES
- ELBOWS
- PENSTOCKS
- AUTOCLAVES



LANCASTER IRON WORKS, INC.
LANCASTER, PENNA., U. S. A.

(*Continued from page* 26)

jurisdiction to entertain portal-to-portal suits. One court held that Congress had excellent precedent before it in the Norris-LaGuardia Act of 1932, withdrawing court jurisdiction to issue injunction in labor disputes.

Operating costs of the steel industry rose by a gross annual rate of more than $600,000,000 between January and the end of July, 1947, according to an estimate by the American Iron and Steel Institute. To help meet this higher cost of living in steel plants, steel prices in July were increased on the average by about $6 a ton—or less than one-third of a cent per pound. Since 1939 steel prices have risen only about half as much as commodity prices in general.

The New Deal die-hards are making one last desperation move to get us back under their bureaucratic control. They are using the danger of inflation for which they, themselves, are largely responsible and distressing conditions in Europe which drain domestic food supplies and thus stimulate inflation as twin crises that can only be met by surrendering our economic independence to their omnipotent wisdom.

The present program of voluntary rationing is just plain idiotic. It was either planned by fools who did not have foresight enough to know that poultryless Thursdays included Thanksgiving, Christmas and New Years, or it was concocted by knaves who intended their plan to fail so that it would serve as a build-up for the proposals that are about to be made to reestablish compulsory government controls.

According to the *Wall Street Journal*:

"What we see proceeding in the name of assistance of Europe is the last stand of the bureaucrats. The managed economy advocates who think that they know what is best for people better than the people know, the pinkish contingent which has romped Washington for a dozen years, the stuffed shirts who fear—and rightfully—that another year will oust them from prominence, the drooling incompetents who have infested government bureaus see big government as their salvation. They have no intention of giving up without a struggle. They exploit human misery. They exploit a situation which might involve their country in a war.

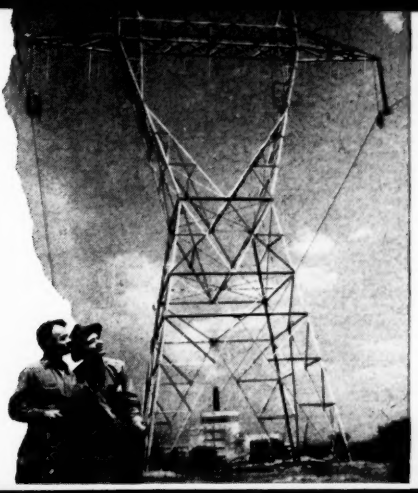
"These same people misled Mr. Truman into advocating wage advances. They induced him to write his veto of the Taft-Hartley act. They induced him to his tragic course in relation to price control. They have maneouvered him into another emergency of their own making.

"When Congress meets let it first determine what the United States can spare for Europe. There are people in Washington who can tell them.

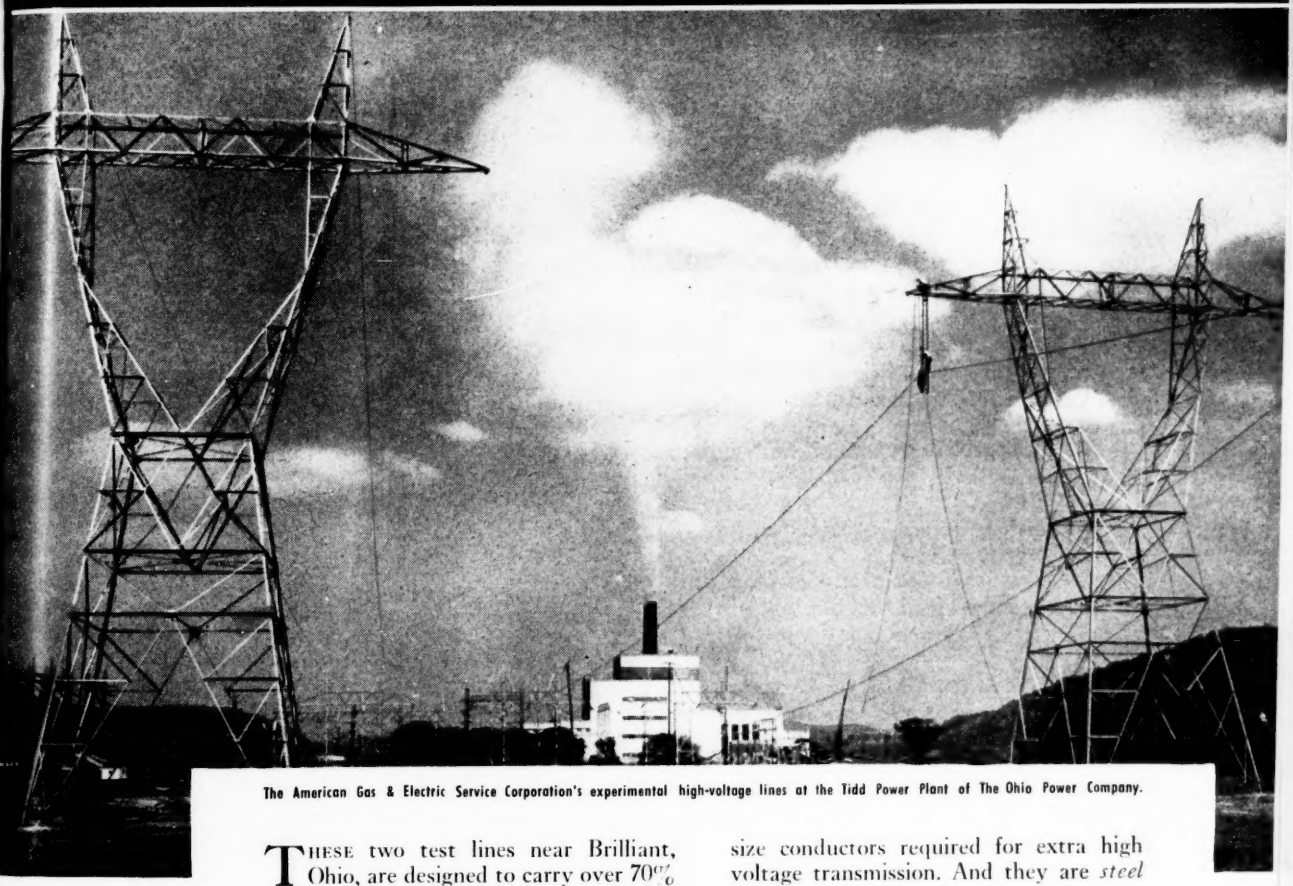
"Then let Congress put the job of mobilizing food shipments where it belongs, in the hands of the Secretary of Agriculture.

"And finally let Congress declare once and for all the idiocy—the criminal idiocy—of trying to fight communism by regimenting the only really free people on the globe."

STEEL TOWERS *that carry half a million volts!*



. . . designed and fabricated by American Bridge



The American Gas & Electric Service Corporation's experimental high-voltage lines at the Tidd Power Plant of The Ohio Power Company.

THESE two test lines near Brilliant, Ohio, are designed to carry over 70% greater voltage than any transmitted today. And for this historic project American Bridge Company furnished the suspension towers, dead-end and angle towers, as well as the substation structures.

The towers are specially designed to support two ground wires, and three super-size conductors required for extra high voltage transmission. And they are *steel* throughout — from crosstie anchors to ground wire peaks.

Whether your own project is large or small, American Bridge has the men, materials and methods to assure you expert tower design, fabrication, and erection. Just call our nearest contracting office.

AMERICAN BRIDGE COMPANY

General Offices: Frick Building, Pittsburgh, Pa.

Contracting Offices in: Baltimore · Boston · Chicago · Cincinnati · Cleveland · Denver · Detroit · Duluth · Minneapolis · New York · Philadelphia · St. Louis

Columbia Steel Company, San Francisco, *Pacific Coast Distributors* · United States Steel Export Company, New York

UNITED STATES STEEL

He has to be RIGHT

A "near miss" is no good.

Location of industrial plants, like finding the exact spot through the surveyor's transit, has to be *right,* too.

Here are the star advantages that make the territory served by the Norfolk and Western the "exact spot" for your plant:

* Intelligent native labor, both skilled and unskilled.

* Alert, progressive communities.

* Nearness to domestic markets and, through the Port of Norfolk, to the markets of the world.

* Abundant variety of raw materials; plenty of power and pure water.

* Friendly tax policies.

* Excellent climate, and scenic beauty.

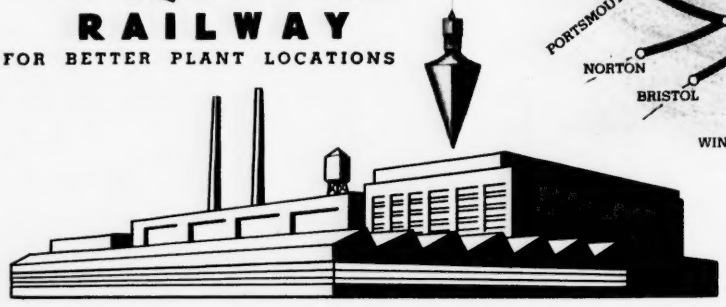
* An almost unlimited supply of all-purpose Bituminous Coal mined within short distance hauls.

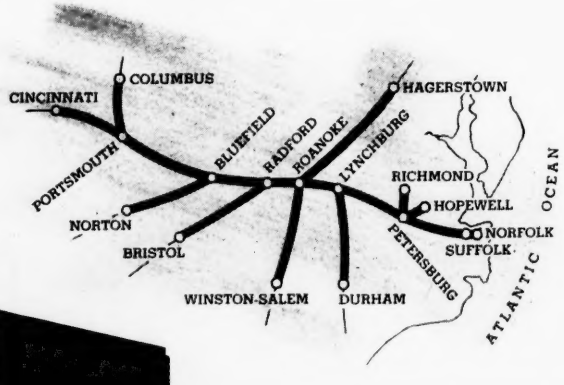
* The Norfolk and Western's *Precision Transportation* — your guarantee that your materials and your finished product will move swiftly and surely.

The Norfolk and Western has complete, detailed information about any section of the territory it serves and will be glad to supply any information you require — in confidence. Write to the Industrial and Agricultural Department, Norfolk and Western Railway, Roanoke, Virginia.

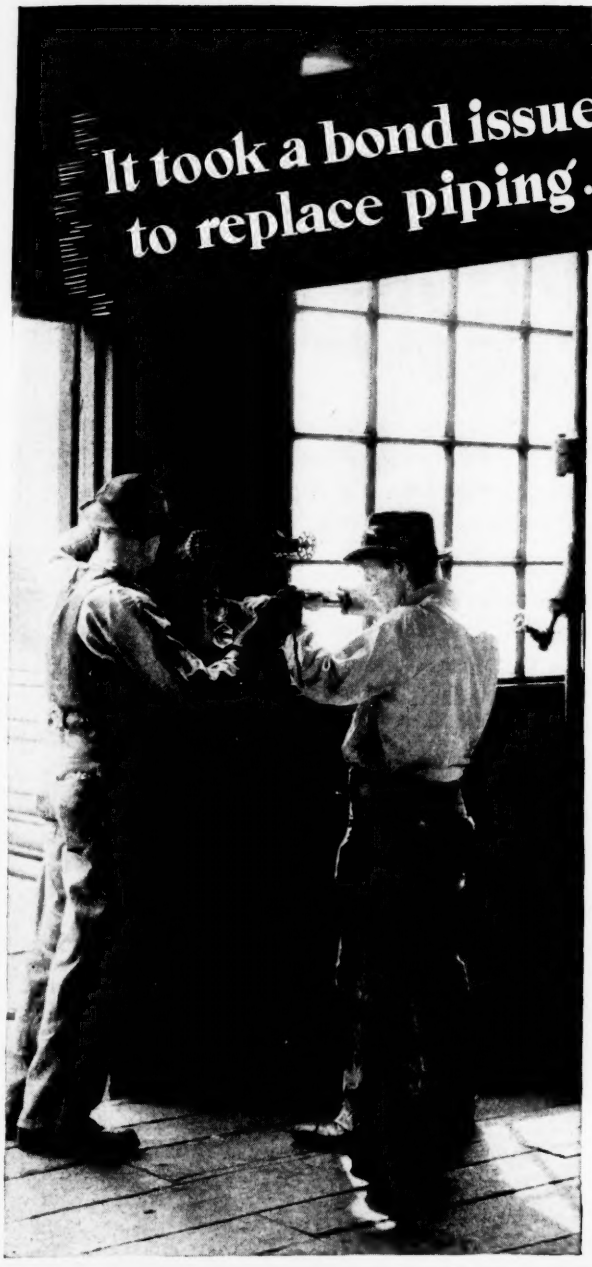
Norfolk and Western RAILWAY

FOR BETTER PLANT LOCATIONS





INSTALL STEEL PIPING ADEQUATE FOR TOMORROW'S NEEDS

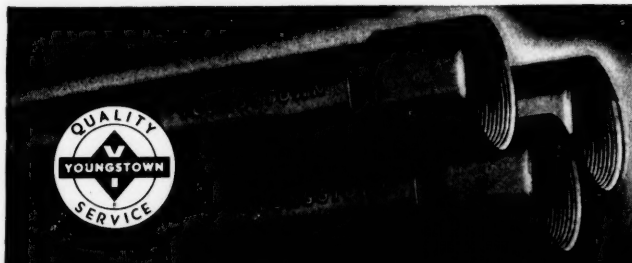


It took a bond issue to replace piping..... so school children could drink

IN a certain Ohio city, a bond issue was submitted to the voters for modernizing a school building. The most publicized item of the modernization program was a provision to install a complete new system of drinking fountains. In planning and erecting the building several years ago, those responsible had failed to specify and install steel pipe large enough to insure a free flow of water to the fountains on all floors.

How much cheaper for the taxpayers --and how much healthier for the children--if adequately sized pipe had been installed in the first place! Then, it would have cost only a few cents a foot more; now, it's costing thousands of dollars more to get fountains that work satisfactorily.

Youngstown pipe distributors are prepared to recommend and furnish steel pipe of proper sizes for any job, adequate for tomorrow's needs.



QUALITY V YOUNGSTOWN SERVICE

YOUNGSTOWN

THE YOUNGSTOWN SHEET AND TUBE COMPANY

GENERAL OFFICES - YOUNGSTOWN 1, OHIO

Export Offices - 500 Fifth Avenue, New York City

Manufacturers of

CARBON - ALLOY AND YOLOY STEELS

PIPE AND TUBULAR PRODUCTS · SHEETS · PLATES · CONDUIT · BARS · RODS · WIRE · COLD FINISHED CARBON AND ALLOY BARS · ELECTROLYTIC TIN PLATE · COKE TIN PLATE · TIE PLATES AND SPIKES

XUM

A NEW BLEACHERY

for the famous

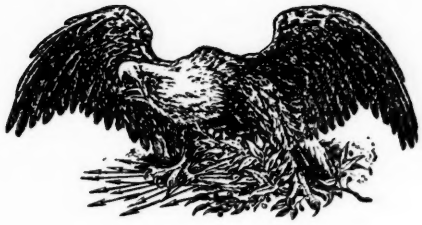
Lady PEPPERELL

The famous Lady Pepperell sheets are now getting their beauty treatments in Pepperell's new, streamlined, bleachery located next door to their 60,000-spindle mill at Opelika, Ala.

Here, in the Company's first Southern bleachery, modern building techniques and materials are combined with the latest machinery and equipment into an efficient and streamlined production unit. Designed for continuous bleaching and finishing of top-quality sheets, pillow cases, work clothing and other fabrics, the new unit includes a steam generating plant and a filtering plant with a daily capacity of 3 million gallons.

As architects and engineers for this modern, efficient bleachery, we were able to employ the experience of 30 years' service to the textile industry.

ROBERT AND COMPANY ASSOCIATES
INCORPORATED
Architects and Engineers
ATLANTA



"What Enriches the South Enriches the Nation"

Business -- Exponent of America

American business has been maligned for so long by self-seeking demogogues, and its puny publicity efforts in its own defense have been so overwhelmed by vilification and deliberate falsification, that even now its war role as defender of America is but dimly seen by the public eye through the artificial fog of deliberate calumny in which it has been enveloped. Its postwar role as defender of America's free institutions and lone bulwark against the inflationary concepts and impulses that have selfishly motivated all other segments of our society except the "white collar class" is, as yet, totally unrecognized.

Of course, since business' unsupported fight to preserve national economic sanity has been unnoticed, the almost overwhelming man-made obstacles it has had to face in its struggle have received but scant public attention.

When the shooting war ceased more than two years ago, thinking business men looked forward to at least a decade of progressive prosperity, first in filling up the void of domestic shortages caused by production for war and then in supplying the new needs created by the improved standards of living that would have inevitably resulted.

With the prospect of prosperity beckoning them on and with the will to progress strong in their minds, exponents of American free enterprise have survived ridiculous official prophecies and pessimistic plans, retention of hamstringing controls and the downright absurd economic theories that were foisted on the highest echelons of government by charlatans seeking personally selfish ends and accepted by economic illiterates seeking political advantage.

Think back for a moment to the fall of 1945 when the government made plans to combat the deflation that its crystal gazers dreamed up. Remember the doleful globs of gloom emitted from Washington about the 8 to 10 million who would be looking for apples to sell during the winter. Recall how the White House swallowed the politically attractive bait that Wallace and his unsavory friends dangled before it when they said that wages could be drastically raised without increasing prices and the administration, pretending to believe this foolishness, agreed to break the "little steel" formula. And don't forget the crocodile tears of the bureaucratic bunglers and the theatric campaign they staged (with government money, yours and mine) to perpetuate controls that meant socialism.

Nor were these all of the idiotic fantasies that business had to struggle against in the fall of 1945—and since. The government meanwhile was, and still is, continuing its depression policy originated in the 1930's of paying subsidies to further stimulate prices of farm commodities. And last but by no means least, it insists on the maintenance of ordinary government expenditures at levels undreamed of even in the heyday of the New Deal.

When we let our minds dwell on the unbelievable accomplishments of business during the war and the trials and tribulations it has weathered since then, can we help but marvel at its virility and ingenuity? With the proof before us is it possible to even consider substituting for American free enterprise any form of paternalistic control?

Business in the United States is based on the intelligent ambition and courage of its citizens. In the hands of free men it opens ever widening horizons of promise for the improvement of human living.

XUM

Let's Blow Our Own Horn

Describing in glowing terms the lusciousness of pecans grown along the coastal belt of Mississippi and Louisiana, an enthusiastic Southern advertiser has this to say: "They are big, plump—like flavorful Oregon pears or those big meaty melons from Utah —they are in a class by themselves."

Let's pass by swiftly the fact that statistics being assembled for the 1948 Blue Book of Southern progress, as well as statistics gathered during many years past, reveal that an abundance of luscious, flavorful pears are being produced throughout the South, even in the rich coastal region that turns out these wonderful pecans; let us also pass by the fact that no larger or meatier melons are to be found anywhere in the country than in Virginia and other Southern states, most likely right in that same coastal stretch.

Let's ignore these thoughts, not because they are unimportant, but because they suggest an idea that is more far reaching. It is the concept that the South should advertise its products on the basis of their own merits and not like a poor relation claiming kinship with a wealthy relative.

Many fine products, of machines as well as of the soil, are being born in the South "to blush unseen," mainly for lack of confidence of their producers in their true value.

This tendency is a lingering flicker from the past, existent only in the form of a mental phantom. Healthy production is nourished by healthy sales and these can be achieved only from a background of utter confidence, not only in the special product being turned out, but in the environmental atmosphere within which it is produced. It is not possible to market Mississippi pecans satisfactorily by linking them, even subordinating, them to Oregon or Utah this or that. The very thought turns the prospective buyers mind to the exemplar and suggests that possibly pecans also are better grown there.

Healthy production requires healthy sales. Healthy sales can be had only by picturing products, confidently, distinctly, and incessantly before the gaze of prospective buyers. This is a truth that all Southern producers must take to heart. The columns of the New Products section of MANUFACTURERS RECORD tell the South's story quite succinctly, even though for every Southern product featured in this enlightening department there are undoubtedly dozens of others yet to come to our attention.

The old admonition to conceal not a light by hiding it under a bushel had no thought of advertising as such; nevertheless it expresses as no other words could the admonition to which Southern producers should give heed.

More About Steel

Among the economic subjects to which the nation should turn its attention, none is more important than the future steel supply.

That the country is fully cognizant of the seriousness of the dwindling iron ore supplies in the long worked and almost worked out district that feeds its ore through the Great Lakes is evident to far-sighted business men. It is also evident to civic leaders who plan to make eager bids for communities other than Pittsburgh to become the future centers of steel and iron activity.

New England, sore hit by loss of its once powerful textile industry to the South, and rapidly receding in industrial importance by the shift of population and business activity southward and westward, sees the glimmering of hopes of rejuvenating its fortunes in a mammoth development of steel manufacturing facilities with imported ore from foreign sources.

The South, fortified by a realization of the geographic advantages of its ports and of its own natural resources, is no less keen to add iron and steel to the supremacies it has already attained in textiles, chemicals, woodworking and tobacco.

This Southern ambition is a worthy one. Besides being the most potent influence known for combatting paternalism and ephemeral theories, community spirit can be credited with more accomplishments toward industrial progress than any one other influence. It has ever thrived in the South, and in these days of disintegration of local self reliance elsewhere, is showing itself at its best. Southern capital and Southern publicists have their eyes on the steel situation. So keen is the scrutiny that they are quick to refute any suggestion, however slight, that the South is not thoroughly competent to qualify as the nation's steel center.

As an example, the San Antonio *Express*, commenting upon a recent article in MANUFACTURERS RECORD on the subject of Southern iron resources, calls attention to certain Texas ores that were unmentioned in the article. These ores, the hematite deposits of Llano County, Texas, are in fact, among the most highly prized of the ferrous family. Probably none more pure than those of Texas are to be found anywhere else in the country. They are, as the *Express* points out, among the most valuable metals available for precision tool manufacture. It was only because they do not fall within the run of ores generally adapted to blast furnace use that they were omitted in the article.

Other Southern communities than those immediately surrounded by vast reserves of iron ore likewise can, and do, visualize participation in future iron and steel production. Three major elements enter into successful prosecution of the enterprise. These are ore, coking coal, and markets close at hand for the finished product. It was these essentials that gave the Pittsburgh region its steel supremacy for so many years. As one or more of these elements wane in other sections, the stronger becomes the potential position of the South. If one element be lacking in any Southern state, it is to be found in another close at hand. And if New England, without either of the first two elements within its own soil, and with the third element receding gradually with the years, dares to hope for a local steel industry, how much stronger should the chance be for any state in the South to become a nuclear part of the nation's steel industry?

LABOR RELATIONS

The Guaranteed Work Week—

a new challenge to management

by
O. C. COOL
Director,
Labor Relations Institute,
New York

STABILIZATION of employment is coming back in the headlines. In fact, it has occupied the spotlight intermittently since the end of the war—its first appearance being in the role of the guaranteed annual wage. Those who followed the labor-management news while the War Labor Board was passing from the scene will recall the emphasis which was placed on this form of guarantee during 1946. There was a time when union after union demanded some form of annual wage assurance whenever a new bargaining day rolled around. For a period of months, the heaviest artillery management could muster was directed against this stand—pounding away at the disadvantages and weaknesses of this type of guarantee. Eventually that phase passed—giving way to something new. Today, little is heard about the guaranteed annual wage. Its place has been taken by something more concrete, more attainable, more practical—the guaranteed workweek.

This type of guarantee is simple, and it has been tested successfully in various non-manufacturing industries. In essence, it merely pledges the employer to assure every worker either a specified number of hours' work each week or a specified minimum weekly wage, the latter to be paid regardless of the number of hours actually worked. In short, it places production and other hourly paid workers on the same weekly salary basis enjoyed by white collar employees.

Here are some examples of the guaranteed workweek, showing how it is applied in various industries:

1. Several wholesale food associations in large Eastern cities not only provide for a guaranteed workweek, but in at least two instances provide for guaranteed *overtime* each week.
2. Nearly all meat packing companies under contract with the CIO Packinghouse Workers guarantee 32 hours' pay each week.
3. One furniture association in New York has a five day guarantee for 21 weeks a year. In addition, this association guarantees at least three days' pay each week for the balance of the year.
4. A building owners' association on the West Coast guarantees all regular full-time employees not less than 48 hours per week.
5. "Extra" bus operators, under one contract, are guaranteed a weekly minimum wage, provided he completes certain reports required of all such operators.
6. One UAW contract specifies that "any employee of the Mechanical Division may request a lay-off and still retain his seniority if the Company cannot guarantee him at least 24 hours per week."

Disadvantages of the Guaranteed Annual Wage

The significance of plans like those described above becomes more clear when they are viewed against the background of the guaranteed annual wage. The advantages of regularizing employment on a 52-week basis are obvious, but these are outweighed by the disadvantages, which can be summarized as follows:

1. *Employment is stabilized at low levels.* The establishment of a guarantee does not insure a high level of employment, because the 52-week plan acts as a brake on risk-taking, especially in regard to expanding the workforce and increasing production.

2. *Hourly wage rates tend to lower.* Lower hourly earnings usually result from a guaranteed wage plan, because the latter spreads the income over the calendar. Under the so called "loan" plan, the worker makes up in busy periods for time not worked in slack periods, and receives no extra pay for overtime.

3. *Application to seasonal industries is difficult.* Many successful guaranteed annual wage plans are in industries which are subject to seasonal fluctuations, but most small and medium-sized companies hesitate to undertake such liabilities if their business is not fairly stable all year round. Even if diversification is not resorted to, greater capital is needed to finance such guarantees—and diversification itself calls for high initial investment.

4. *The hazard of increased inventory.* Stabilizing output in order to maintain guaranteed annual wages usually involves piling up inventory. If the goods or parts deteriorate or become obsolete, or if storage facilities must be expanded at high cost to accommodate them, financial losses may eventuate. This hazard increases whenever the price trend is downward, as it is in many lines today.

5. *The threat of cyclical fluctuations.* While a guaranteed annual wage means most to workers in the face of possible depression and potential loss of work or wages, it is precisely under the impact of such a change that the plan is most likely to fail. Depression circumstances may force a company either to abandon its annual wage guarantee or go out of business. Viewed in this sense, as Dr. Emerson P. Schmidt of the Chamber of Commerce of the U. S. has pointed out, the guaranteed annual wage is a form of year-round unemployment insurance—with the cost fully borne by the employer. Few companies can afford to place themselves in this position.

In contrast with these disadvantages of the guaranteed annual wage, the guaranteed workweek has six major advantages when applied to production workers, as follows:

1. The guaranteed workweek is applicable to seasonal industries, whereas as pointed out above, the guaranteed annual wage is difficult to apply to such trades.
2. The employer who guarantees on a weekly basis needs to plan his manpower requirements only one week ahead.
3. There is less likelihood that employers will allow stockpiling of goods, merely to keep employees busy.
4. The seniority and eligibility rules which often make the guaranteed annual wage so complex (Another disadvantage!) are unnecessary when the guarantee is by the week instead of for a year.
5. This method is especially desirable for manufacturers with continuous process plants, where it is necessary to keep a full crew all week long.

Problems to be Overcome

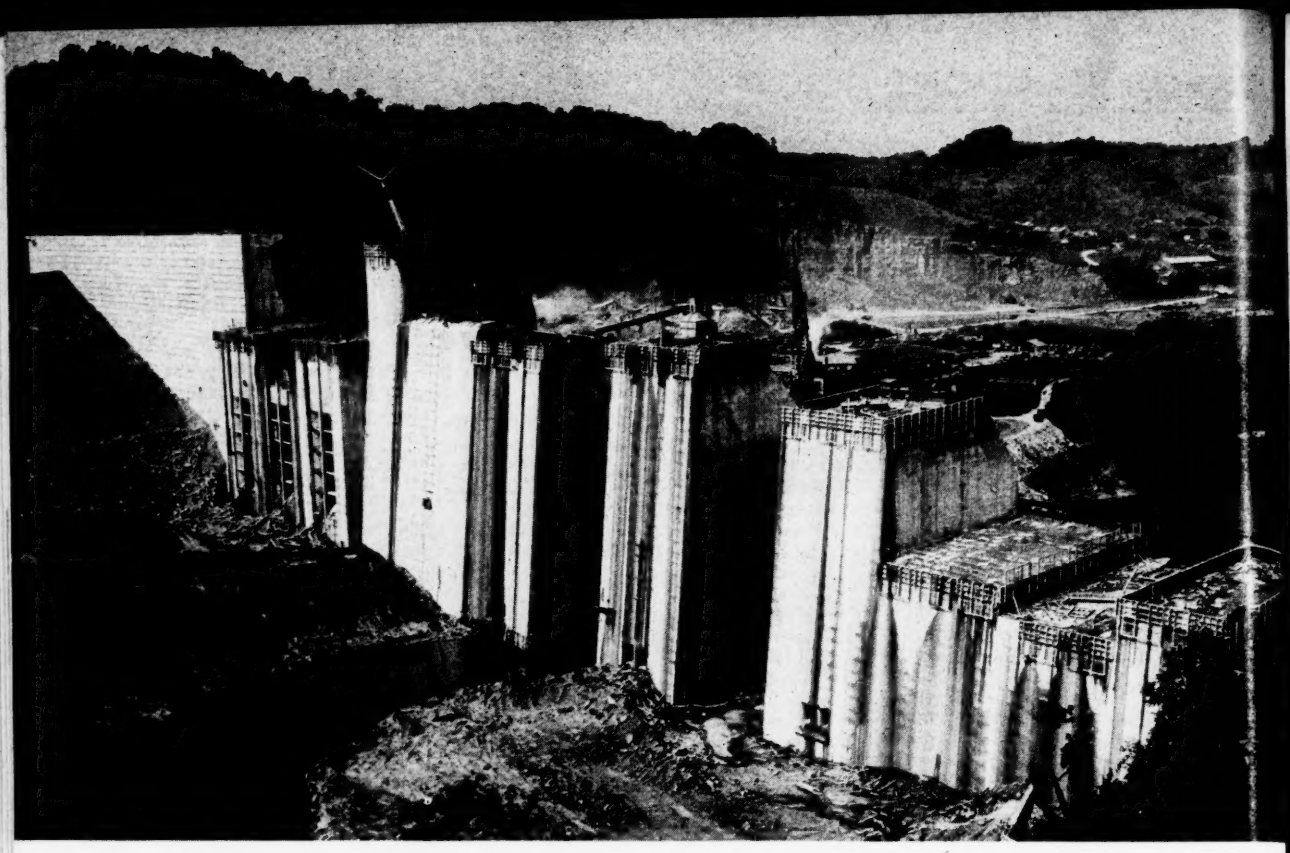
There are, of course, certain problems which must be overcome before the guaranteed workweek can be placed, economically, into effect. One of these difficulties may embrace existing union rules or contract clauses on transfers. For example, they may obstruct or prohibit the transfer of men from one job to another in the plant—and it is difficult to stabilize employment on even a weekly basis without involving transfers of this type, which help to keep employees occupied during the full work week. For instance, it may become necessary for machine operators to help out in the shipping room for brief periods—and to accept the lower wage for the time so worked.

Unless the transfer clause in the agreement with the union provides for such reductions in rate—usually after a certain number of hours on the lower-paid job—wage costs in the plant will increase. The solution is to amend the contract clause along the following lines:

"Any employee temporarily transferred to another job classification shall receive his regular rate of pay, except as follows: (a) if the assignment is for more than — hours to a higher rated job classification, the worker shall then receive the rate for that job for all hours worked in that classification; (b) if the assignment is for more than — hours to a lower rated job classification, the worker shall then receive the rate for that job for all hours worked in the classification."

A guaranteed workweek is *not* a guarantee of employment. When layoffs become necessary at the close of any particular workweek, management must be assured of a working crew sufficient to handle the anticipated work load for the week to follow. This involves a more *se-*

(Continued on page 70)



Above—Construction proceeds on the $36,900,000 Center Hill dam, one of six projects in the Cumberland River basin which are included in the plan for development of the Ohio River basin for flood control and other purposes. The prime contractor is Massman, Metcalfe and Hamilton Companies, of Lancaster, Tenn. Work is under supervision of Col. H. V. Canan, United States District Engineer at Nashville.

Southern Construction Value of $227,471,000 in October is Peak of the Year

Ten-Month Contract Total Amounts to $1,559,824,000

SOUTH'S CONSTRUCTION BY TYPES

	October, 1947		Contracts Awarded First Ten Months 1947	Contracts Awarded First Ten Months 1946
	Contracts Awarded	Contracts to be Awarded		
PRIVATE BUILDING				
Assembly (Churches, Theatres, Auditoriums, Fraternal)	$4,926,000	$10,763,000	$29,077,000	$22,114,000
Commercial (Stores, Restaurants, Filling Stations, Garages)	5,799,000	4,416,000	43,646,000	56,830,000
Residential (Apartments, Hotels, Dwellings)	65,002,000	36,154,000	277,810,000	264,409,000
Office	1,989,000	8,274,000	35,921,000	19,335,000
	$77,716,000	$59,607,000	$386,454,000	$362,688,000
INDUSTRIAL	$40,594,000	$79,497,000	$350,493,000	$366,734,000
PUBLIC BUILDING				
City, County, State, Federal and Hospitals	$11,790,000	$52,504,000	$115,810,000	$136,486,000
Housing	.....	.....	470,000	9,007,000
Schools	17,825,000	46,863,000	149,496,000	87,167,000
	$29,615,000	$99,367,000	$265,776,000	$232,660,000
ENGINEERING				
Dams, Drainage, Earthwork, Airports	$12,073,000	$30,315,000	$140,955,000	$171,860,000
Federal, County, Municipal Electric	879,000	14,375,000	14,170,000	23,920,000
Sewers and Waterworks	12,599,000	18,289,000	61,911,000	47,670,000
	$25,551,000	$62,979,000	$217,036,000	$243,450,000
ROADS, STREETS AND BRIDGES	$53,995,000	$90,743,000	$340,065,000	$306,586,000
TOTAL	$227,471,000	$392,193,000	$1,559,824,000	$1,512,118,000

SOUTHERN construction reached the highest point of the year in October when contracts awarded for work below the Mason and Dixon line amounted to $227,471,000, or fifty-seven per cent more than the figure for the preceding month and thirty-three per cent above the value recorded during October of last year.

Decided upward trends in all types of construction except public building were responsible for the strong gains made in October. Private building led the several categories with a total valuation of $77,716,000, a figure bolstered considerably by a residential building total of $65,002,000, this being more than twice the preceding month's valuation for dwelling projects.

October's substantial aggregate raised the value of construction recorded during the first ten months of this year to a peak beyond that for the similar period of last year. The total for the current ten months is $1,559,824,000; that for the comparable period of last year was $1,512,118,000, or a difference of about three per cent in favor of this year's southern construction valuation.

A study of the 1947 ten-month total shows private building to be at the top, with a total of $386,454,000, followed by industrial construction and road construction with totals of $350,493,000 and $340,065,000, respectively. The private building and road valuations are above those for the comparable months of last year.

Right—Perspective of the $1,800,000 Monroe office building project at Dallas, Texas. Architects are Walter Ahlschlager and J. N. McCammon.

The industrial total represents a drop, as did the engineering construction total of $217,036,000. Public building in the ten months totaled $265,776,000, an increase of fourteen per cent. School construction amounting to $149,496,000 participated in the gain.

Composition of the October tabulation is $77,716,000 for private building, a valuation heading the list; $53,995,000 for roads, streets and bridges, ranking second; $40,594,000 for industrial construction in third place, and the $29,615,000 for public building and the $25,551,000 for engineering construction in fourth and last positions, respectively.

Eighty-three per cent of the private building total is made up of the valuation placed on southern residential construction. The balance includes the $5,799,000 for commercial projects, such as stores, filling stations and other similar projects; $4,926,000 for assembly buildings including churches and theatres and $1,989,000 for office type structures.

The October industrial total of $40,594,000 as reported in the Daily Construction Bulletin of the MANUFACTURERS RECORD is almost twice the valuation for such work in the preceding month. However, the figure is about twenty-nine per cent below the same type of work for the comparable month of last year.

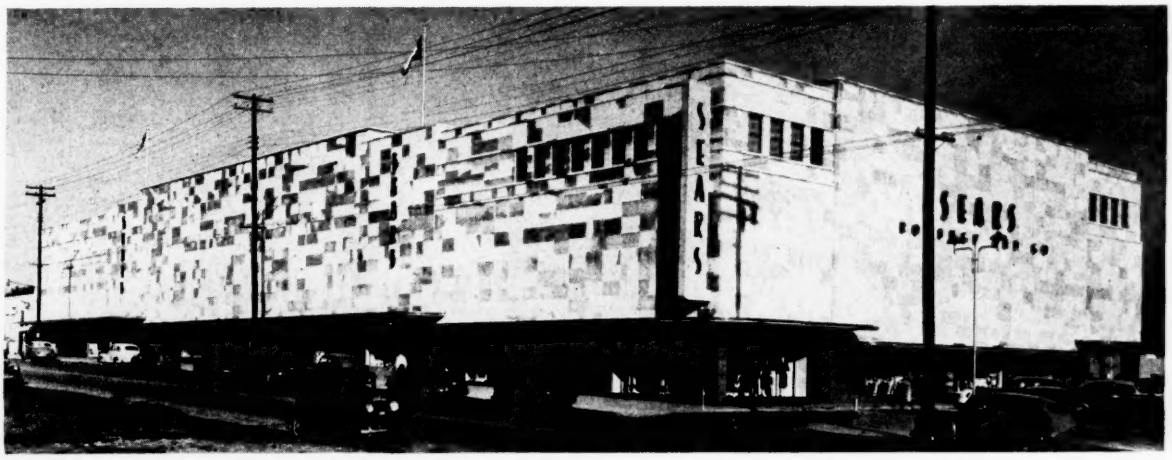
Highway construction is another field where southern valuations show a substantial increase during October. The figure for such work was $53,995,000, or substantially above twice the amount tab-

(Continued on page 66)

SOUTH'S CONSTRUCTION BY STATES

	October, 1947		Contracts Awarded First Ten Months 1947	Contracts Awarded First Ten Months 1946
	Contracts Awarded	Contracts to be Awarded		
Alabama	$7,468,000	$23,218,000	$45,279,000	$60,822,000
Arkansas	3,807,000	5,255,000	38,014,000	44,003,000
Dist. of Col.	3,928,000	8,114,000	36,924,000	13,379,000
Florida	21,606,000	63,104,000	167,887,000	172,155,000
Georgia	11,128,000	16,193,000	129,628,000	124,806,000
Kentucky	6,551,000	7,623,000	27,463,000	42,195,000
Louisiana	28,147,000	18,505,000	149,195,000	76,512,000
Maryland	15,683,000	7,204,000	130,590,000	137,110,000
Mississippi	3,635,000	6,892,000	59,672,000	60,413,000
Missouri	9,147,000	28,397,000	62,705,000	45,067,000
N. Carolina	9,138,000	25,737,000	62,527,000	68,658,000
Oklahoma	9,553,000	19,456,000	35,974,000	48,426,000
S. Carolina	7,833,000	4,235,000	43,206,000	70,629,000
Tennessee	10,426,000	35,876,000	39,629,000	94,762,000
Texas	74,918,000	106,858,000	449,230,000	388,677,000
Virginia	4,253,000	9,435,000	54,391,000	52,934,000
W. Virginia	250,000	6,091,000	28,110,000	11,510,000
TOTAL	$227,471,000	$392,193,000	$1,559,824,000	$1,512,118,000

Below—Second largest Sears Roebuck store in the Nation is this new $3,500,000 project at Dallas, Texas. The structure covers 110,471 square feet and faced with limestone and pink granite. Concealed lighting and escalators are features of the interior. An adjoining parking lot covers 240,000 square feet.



Above—Plant of the Newport News Shipbuilding and Dry Dock Co., not only the largest employer on the lower Virginia peninsula but also a model of labor-management relations with no stoppages due to differences in sixty years.

Newport News Pushes Campaign for Diversified Industries

Seven Plants Already Procured

Above—Former Dodge boat plant where the Arkell Safety Bag Co. will install a million dollars worth of equipment.

NEWPORT NEWS, birthplace of many of the Nation's greatest ships of both peace and war, is forging ahead toward further goals of industrial development, which if accomplished as planned will make that Virginia city and its contiguous communities a model of diversified production.

Seven new industries already have been attracted to the 300-square mile lower peninsula formed by the confluence of the James and York rivers with the lower Chesapeake Bay, as the result of a concentrated campaign of industrial promotion. Several additional plants are in prospect. One is a large New England worsted mill; another, a molded rubber products factory.

The main theme of this drive for industry, which thus far has produced such remarkable results, is the labor situation. There are, of course, other favorable factors such as extensive rail and harbor facilities, a housing development and construction program involving about 800 units in nearby counties, a modernized local bus transportation system, a fine road system and adequate sources of water and power, as well as an $8,000,000 sanitation project.

Local banking interests back the program on a sound business basis. Newly published figures on the First National Bank of Newport News, one of the leaders in the movement, show that institution's assets to amount to $33,521,881 of the peninsula's total banking assets of $79,328,054. Hampton, where two of the new plants have located, has two banks with resources of $14,367,958.

No concessions whatever are made to the new industries. The emphasis is on the fact that the peninsula's labor force is made up of people, who in the words of one of the leaders of the movement

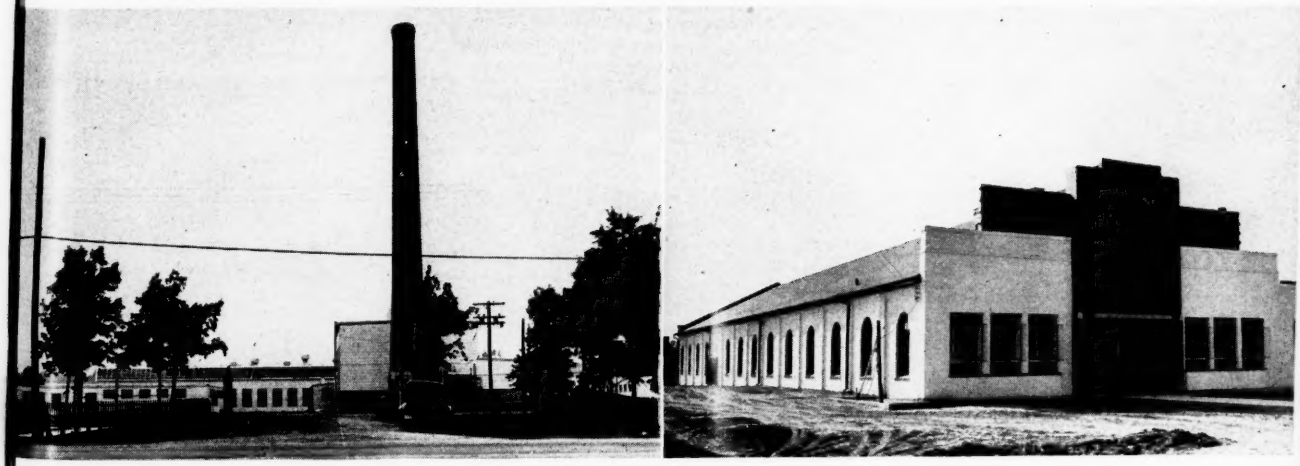
(*Continued on page* 40)

Above—Newport News terminal of the Chesapeake & Ohio Railway. Four of its nine piers are for merchandise. Its two coal piers will soon be augmented by another under construction.

Below—Left to Right—Raymond B. Bottom, publisher of the creditable Newport News newspapers; J. C. Biggins, who has been city manager for 22 years, and G. A. Bentley, the industrial commissioner, who is directing the campaign.

Below—Right—The building occupied by the R. K. Laros Silk Co., Bethlehem, Pa., maker of high-grade women's underwear, was formerly an old carbarn. Walls and roof trusses were only parts of structure standing before rebuilding.

Below—Left—Crown fastener plant, the first new industry obtained under the diversification campaign, was established in the old laundry of the Hampton Roads Port of Embarkation.



are "temperate, stable and conservative" and "without the radical tendencies and beliefs found in the larger northern places."

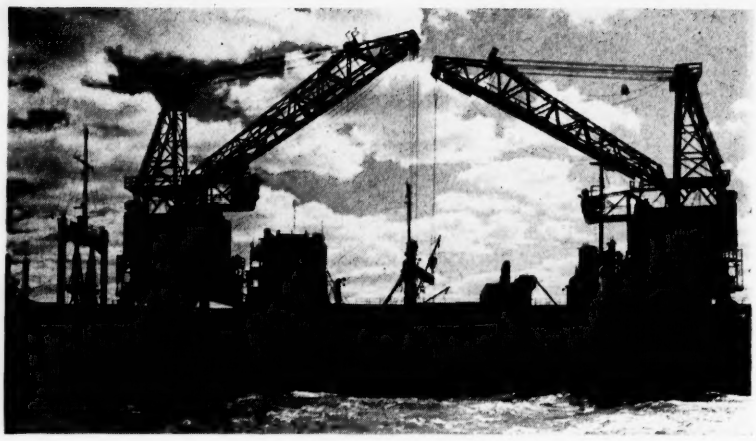
To support this claim, Newport News businessmen proudly point to the record of the Newport News Shipbuilding and Dry Dock Co. where management-labor relations are unmatched not only in shipbuilding but in industry generally. During 60 years there have been no work stoppages because of labor disputes.

This success is attributed to careful selection of personnel. More than 50 per cent of the employees are Virginians and about 30 per cent are from North Carolina. These people—they number around 11,000—have proved their aptitude in two wars. Not only have they mastered their trades, but they have also shown they can be entrusted with the responsibilities of supervision and leadership.

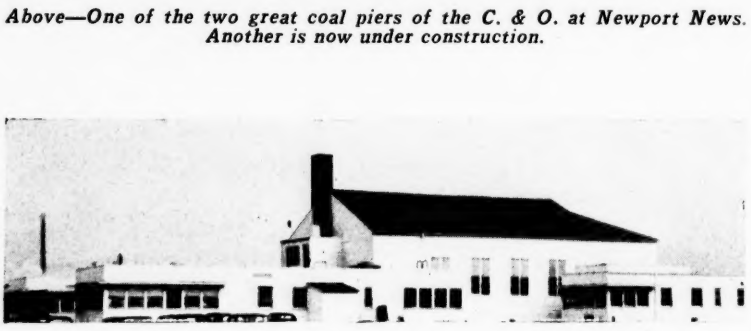
The company's apprentice school is one of the best and ranks at junior college level. Retirement and disability pensions, company credit, vacations with pay and hospitalization, as well as bonuses and other benefits favorably influence the workers. Faith in their company and its policy to keep them at work through the lean years has strengthened their loyalty.

Labor relations at the great terminal operated at Newport News by the Chesapeake and Ohio Railway are comparably good. This sprawling terminal employs about 2,500 workers and is also manned by people "without the radical tendencies and beliefs." The development dates back to 1881 when Collis P. Huntington, the great American railroad builder, selected the site as the Atlantic terminal for his Central Pacific - Chesapeake and Ohio route.

Today the terminal and the shipbuilding plant—also a Huntington enterprise—occupy almost the entire shore line on one side of the point where Newport News lies. Its nine long piers project far seaward toward the 70-foot deep Hampton Roads, the watery area just inside the capes which is described as the world's largest harbor. Four of the docks are merchandise piers with a total of 500,000 square feet of covered space. Two open piers provide additional handling facilities. One is equipped wth huge, high speed gantry cranes. A passenger pier is part of the layout.



Above—One of the two great coal piers of the C. & O. at Newport News. Another is now under construction.



Above—The A. J. Siris plant, makers of powder puffs and one of the new industry acquisitions.

Another pier now under construction is scheduled to be completed by the end of 1948. The third Chesapeake and Ohio coal pier, this project will increase the company's coal loading capacity for coastwise and transoceanic movement to approximately 2,000,000 tons a month. It will have the facilities for berthing and loading four ocean going vessels at the same time. Flanked by coal pier 15 on one side and pier 9 on the other, the new pier will be equipped with four revolving car dumpers at the head of the haulage incline with its capacity to simultaneously lift two 70 ton cars at the rate of 40 lifts an hour.

These two major operations—the one for building vessels and "off-ship" products such as turbines, wool carding machines and machines for use in rayon and paper manufacture, and the other the huge terminal of the famous "Chessie Cat" route, which in reality is one of the nation's largest coal handling railroads—form the backbone, so to speak, upon

(*Continued on page* 62)

Below left—Tracks of the C. & O. extend southward into the lower peninsula to the big terminal at Newport News. At the right is one of the wide highways traversing the area.

PRODUCTION

Economic Lot Sizes in Manufacturing—II

Derivation of the Formula

by
Paul T. Norton, Jr.
Associate Editor

THIS is the second of a series of articles on the economic lot size problem. The first article, which was published in our October issue, discussed the problem in general terms, and explained why increased mechanization and the present high price level have combined to make the problem of very great present importance. The first article also showed that the economic range of lot sizes is even more important than the economic lot size itself, and that tabular and graphical methods can be used to determine the economic range as well as the specific single economic lot size, while economic lot size formulas can give only the economic lot size, with no information whatever concerning the economic range.

In spite of the limited amount of information obtainable from economic lot size formulas, these formulas are important because they expedite the finding of the economic lot size itself. When there are many of these problems to be solved, the determination of the economic range can often be hastened by using a formula to find the economic lot size and then by using tabular or graphical methods to determine the economic range, or in other words, how much the lot size can be varied from the economic lot size without too greatly increasing the total charges per piece.

Economic lot size formulas have the further advantage that they give definite proof of the relationship between various factors, and make it easier to judge how changes in one or more factors will affect the economic lot size.

Some persons have condemned economic lot size formulas as being too theoretical and too mathematical. These formulas certainly should not be used by those who do not understand them, but neither the underlying theory nor the mathematics is at all difficult.

The purpose of this article is to derive an economic lot size formula which is simple enough to be satisfactory for everyday use and which at the same time is economically sound in that it takes account of capital turnover and the various risks incident to the storage of finished parts or products, and also considers separately storage charges due to both invested capital and rental of storage space. In the original derivation certain simplifying assumptions will be made, but later in this article an explanation will be given of several modifications of the formula which may be used to advantage under certain circumstances. Extreme accuracy in the determination of the economic lot size is not possible nor even very important, because of the rather broad economic range, but economic soundness is essential if one wishes to avoid lot sizes that are outside the economic range and which may result in total unit charges that are considerably greater than is the case when the problem is correctly handled.

Derivation of the Formula

In the formula to be developed, let

- Q = the lot size (pieces per lot)
- Q_e = the economic lot size (pieces per lot)
- S = total preparation cost per lot (dollars) including cost of preparing manufacturing orders, cost of setting up machines, and any other similar costs that are independent of the number of pieces in the lot
- P = pieces made per day
- U = pieces used per day
- N = days worked per year
- C = material, direct labor, and factory overhead expense per piece (dollars)
- A = cost of storing one piece for one year (dollars)
- B = taxes, insurance, etc. (per cent per year on inventory)
- I = minimum attractive rate of return on capital (per cent per year)
- V = total amount to be charged against each piece (dollars) for
  - (a) preparation costs, including cost in production control department as well as cost of machine set-ups
  - (b) material, direct labor, and factory overhead expense
  - (c) storage charges, including return on capital

It will be assumed that the actual expenditures for material, direct labor and factory overhead expense for the lot take place at such times that on the average they all may be considered to occur at the moment production begins.

It will also be assumed that the consumption rate is uniform. If the demand is seasonal, and the amount tied up in finished inventory is considerable, it may be desirable to manufacture in lots of different size during different seasons. The proper lot size for each season may readily be determined by simply using the proper consumption rate for that season. (It will be shown later in this article that the economic lot size varies approximately as the square root of the consumption rate, or in other words, Q_e varies approximately as $\sqrt{U}$.)

Investment Charges

Under the assumptions that have been made, the maximum amount of capital tied up in finished inventory will be CQ dollars, and the average amount of capital thus tied up will be $\frac{CQ}{2}$ dollars. As there are NU pieces per year, the average amount of capital thus tied up *per piece* will be $\frac{CQ}{2NU}$ dollars.

Taxes and insurance must be paid on finished inventory, and if the rate for taxes and insurance is B per cent per year,

Unit charge for taxes and insurance

$$(\text{dollars}) = \frac{BCQ}{2NU} \qquad (1)$$

Cost accountants do not ordinarily include a charge for return on capital as part of the cost of a product. However, in studies of this sort, where lots of different size result in different amounts of invested capital, it is necessary that this factor be considered. Furthermore, the rate to be used should be the minimum attractive rate of return for investments of comparable risk, and not merely the interest rate paid on borrowed capital. The use of the minimum attractive rate of return automatically takes care of capital turnover. If the minimum attractive rate of return is I per cent per year,

Unit charge for return on capital

$$(\text{dollars}) = \frac{ICQ}{2NU} \qquad (2)$$

Storage Space Charges

A charge must also be made for the rental value of the storage space occupied by the inventory. In some manufacturing industries, furniture for example, it is generally not necessary to reserve permanently a certain space for each item. In such cases the space resulting from a reduction in the inventory of one item can generally be used to store other items as they come from the manufacturing processes. In other industries, especially where goods are stored in bins, a certain amount of space is permanently reserved for each item, and no attempt is made to place other items in this space, no matter how nearly empty it may be. We shall assume that the second case holds, or in other words, that storage space must be permanently reserved for the maximum number of pieces of each item that is ever placed in storage. P-U pieces will be placed in storage each day during the time that the production process continues. Production will continue for $\frac{Q}{P}$ days, and the maximum number of pieces for which storage must be provided will be $\frac{Q}{P}(P\text{-}U)$ or $Q(1 - \frac{U}{P})$ pieces. (It will be observed that where P is much larger than U, the number for which storage must be provided is very nearly equal to Q itself.) As it costs A dollars to store one piece for one year, and NU pieces are used per year,

Unit charge for storage space

$$(\text{dollars}) = \frac{A(1 - \frac{U}{P})Q}{NU} \qquad (3)$$

The total charges per piece, incident to storage, are the sum of (1), (2), and (3), and may be written

$$\left[\frac{(B + I)C + 2A(1 - \frac{U}{P})}{2NU}\right] Q \text{ or } KQ \qquad (4)$$

(Continued on next page)

where the constant K represents the terms within the bracket, all of which are constants.

It is evident that the total charges against each piece are made up of three parts: the unit preparation costs $\frac{S}{Q}$, which vary inversely with size of lot; the approximately constant unit cost for material, direct labor and factory overhead expense C; and the unit charges incident to storage KQ, which vary directly with size of lot. Therefore, the total charges against each piece will be

$$V = \frac{S}{Q} + C + KQ \qquad (5)$$

The economic lot size is obviously the lot size for which V is a minimum. This may easily be found by tabular or graphical methods, but the simplest mathematical way is to find the first derivative and set it equal to zero.

$$\frac{dV}{dQ} = -\frac{S}{Q^2} + 0 + K \qquad (6)$$

Setting $\frac{dV}{dQ}$ equal to zero, we find that

$$Q_e = \sqrt{\frac{S}{K}} \qquad (7)$$

The equation last given is the conventional type of economic lot size formula, although factor K in this formula includes important elements which are not generally included in formulas as simple as this one.

It will be noted that the economic lot size formula just derived can be transposed to read

$$\frac{S}{Q_e} = KQ_e \qquad (8)$$

This is significant as it is the mathematical proof that, at the economic lot size, the unit preparation costs are equal to the unit charges incident to storage.

Use of the Formula

In order to illustrate the use of the formula, the economic lot size will be determined under the following conditions, which are the same as in the example given in the article published in our October issue:

S = $10.00
P = 1000 pieces per day
U = 100 pieces per day
N = 300 days worked per year
C = $0.10 per piece
A = $0.001 per piece per year
B = 3 per cent per year
I = 20 per cent per year

From (4)

$$K = \frac{(0.03 + 0.20)0.10 + 2(0.001)(1 - \frac{100}{1000})}{2(300)(100)} = \$0.00000041$$

From (7)

$$Q_e = \sqrt{\frac{10.00}{0.00000041}} = 4940 \text{ pieces}$$

It is a simple matter to determine from the formula that the economic lot size is 4940 pieces, but the formula tells us nothing with regard to the total unit charges at the economic lot size, nor how much these total unit charges increase for other lot sizes. This valuable information can best be secured by tabular or graphical methods. (These methods were explained in detail in the earlier article of this series which was published in our October issue.)

Most economic lot size formulas use the interest rate being paid on borrowed money when making the charge against capital invested in inventory. This practice neglects one of the most important business factors, namely the rate of turnover of capital tied up in inventory. This rate of turnover of capital is important because it largely determines the risk of loss due to such things as deterioration and obsolescence of the product while in storage. While the concept is a novel one, it should be evident that charging a rate of return based on the risks involved will insure a rate of capital turnover that is high enough to take care of all existing risks.

In the present case, it has been assumed that the risks require a rate of return of 20 per cent. If the conventional interest rate of 6 per cent is used, the formula will give a value of 7450 pieces (K = $0.00000018) instead of 4940 pieces. The broken lines of the cut of the previous article show clearly what happens when an interest rate of 6 per cent is used.

Some readers may have noticed that the preparation cost per piece was not considered in any way when determining the capital tied up in inventory. It can easily be proved mathematically that this factor does not affect the economic lot size, nor does it enter into the final formula in any way. If this factor is included, the value of V at all lot sizes will be increased by a constant amount $\frac{(B + I)S}{2NU}$.

Modification of Formula Factors

An examination of the derivation of constant K which was given earlier in this article will show that this constant, and therefore the economic lot size formula itself (as well as tabular and graphical methods), can be modified to suit the conditions of individual companies. The ingenuity of the reader will doubtless suggest to him many modifications in addition to the few which will be given in this article. Most modifications will probably have to do with the amount of capital tied up in inventory and the amount of space required for storage.

When deriving K earlier in this article it was assumed that on the average the expenditures for material, direct labor and factory overhead expense took place at the moment production began. If it appears that a more accurate description of the actual situation is that these expenditures take place when production of each piece is completed, the capital invested in inventory may well be taken as merely that represented by the pieces that go into storage. If so, the first part of K should be multiplied by the factor $(1 - \frac{U}{P})$. When P is very large as compared with U, there is little difference between the two assumptions.

When deriving K earlier in this article, it was also assumed that storage space must be permanently reserved for the maximum number of pieces that is ever placed in storage. If storage space released by the shipment of a piece of one item may be used for other items (space not permanently reserved for each item), only about half as much storage space is required and the second part of K should be modified by using A in place of 2A.

It is often possible to simplify the calculations considerably by completely eliminating the factor $(1 - \frac{U}{P})$ wherever it appears. This really amounts to an assumption that P is very large as compared to U. It will be noted that with this modification K varies inversely with U, and Q_e varies directly as $\sqrt{U}$.

Variable Seasonal Demand

If the demand (U) varies greatly from season to season, it may be desirable to determine the economic lot size for each season. As pointed out in the preceding paragraph, when P is very large as compared to U, Q_e varies directly as $\sqrt{U}$. Sometimes it may be desirable to modify the regular formula to read $Q_e = D\sqrt{U}$, where D will be the value of Q_e found from the regular formula when U = 1. The economic lot size for any value of U may then be determined by multiplying this factor D by $\sqrt{U}$.

Reserve or Emergency Stock

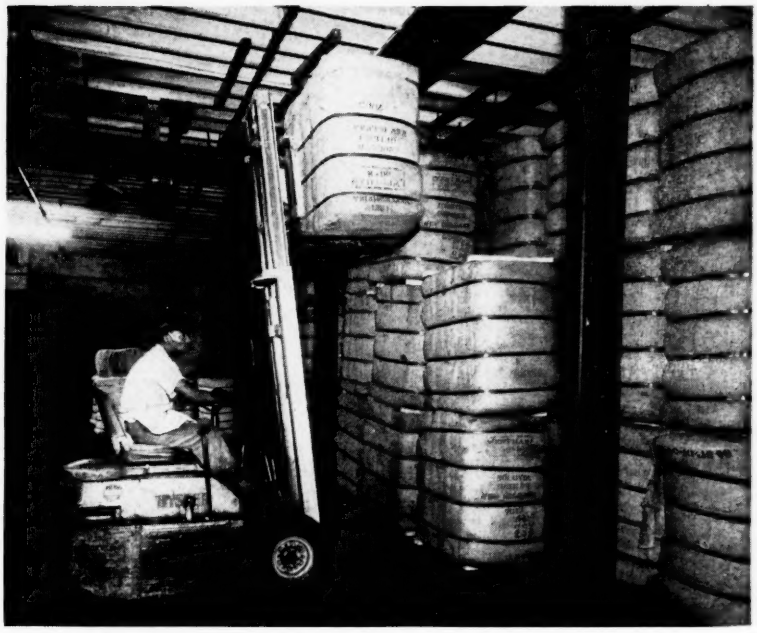
When scheduling their production, many manufacturers plan to have a certain minimum number of pieces of an item in stock when the following lot begins to enter storage. A study of the reasons for this policy will show that the economic lot size is independent of this reserve or emergency stock and that no attention need be paid to the reserve or emergency stock when determining the economic lot size. The only possible reason for having such a reserve stock is to avoid the risk of running short of the item either because of an unexpected demand or of some delay in production. If sales and production programs are carried out in accordance with the estimates upon which the economic lot size was based, the use of a reserve stock will simply increase the number of pieces in stock at all times by the amount of the reserve stock. The added charges incident to the storage of the reserve stock, while real, should be looked upon as a charge against management which is necessary because of the impossibility of accurately predicting the consumption rate or the time required to produce an item in the factory.

Deterioration or Obsolescence of Product

Some economic lot size formulas include an additional factor which is supposed to take care of the danger of loss through such things as deterioration and obsolescence of product while in storage. While the danger of such a loss can be shown to increase with an increase in lot size, there is no definite simple mathematical relationship. The most practical way to take care of this matter is to consider it as an added business risk, to be taken care of by increasing the minimum attractive rate of return on invested capital.

Examples of Actual Economic Lot Size Studies

The third and last article in this series will be published in our December issue and will contain a number of examples of actual economic lot size studies which have been made by the author for several industrial concerns in Virginia. Actual data will be used. In addition there will be some general comments on some points of similarity and of difference between the examples used.



Materials Handling, "Almost" a New Business Science

Above—Lift truck handles burlap bales at Fulton Bag and Cotton Mills, New Orleans, La.

by

John F. Johannsen*

MATERIALS handling is one of the few operational problems yet to be partially solved by top management groups. Recognition has been given materials handling as a major manufacturing and distribution problem; almost nothing has been done about it.

Materials handling savings or cost reductions are the most direct approaches towards an immediate increase in profits or reduction of total manufacturing or distribution costs.

Industry-wide surveys indicate that almost twenty two per cent of the average cost of producing all manufactured goods lies in materials handling. Almost thirty per cent of the time necessary to produce all manufactured goods is consumed by materials handling. No figures are available as to what percentages of the dollar cost or time consumed in the distribution of goods is represented by materials handling. Our estimate based on a very meager amount of information coming from spot checks is as high as forty per cent. This is exclusive of shipping charges.

So here is a major business problem known to be costly and recognized as one of the stumbling blocks to increased production and therefore of sales. This problem is without benefit of actual operational cost figures and completely devoid of the benefits of engineering advice and study. This problem, which we call materials handling, has all of the indications of being "*almost*" (with emphasis on the word "almost")—"Almost a New Business Science."

No one knows very much about materials handling.

Our accounting experts can tell us only of the direct labor costs of materials handling. They cannot tell us the actual total cost. They, therefore, cannot accurately compute the benefits of materials handling programs. All they know is that when improved materials handling methods are installed, cost goes down and profits go up.

Our production men know that improved or modernized materials handling methods kick up production total. Labor savings devices such as lift trucks, straddle trucks, conveying systems, mobile and overhead cranes, and the use of pallets make the job easier. Production men know all these things but they do not know how to effect a complete materials handling program.

Engineers can design fine handling equipment and tools. Engineers have not programmed the use of them. There are no materials handling engineers worthy of the title, no text books worth the reading, no teachers of the subject, yet every industry needs the obvious advantages of all of these services.

Materials handling as a problem has always been present; it is only in recent years that any serious attempt has been made to solve the problem.

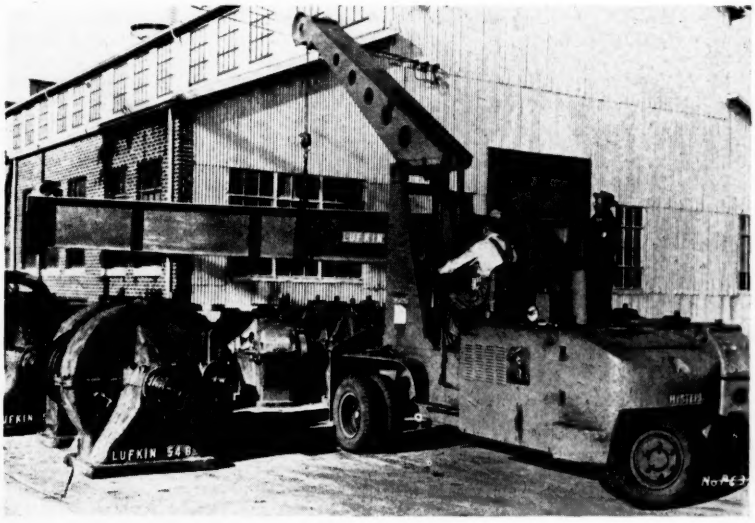
What Is Meant by Materials Handling

Materials handling may be defined as being the science of applying mechanized methods for the expeditious and economical handling of materials. The word "materials" is defined as including all types of products or goods irrespective of their type or class. Numerous physical factors must be considered when packaging, bundling, crating, and handling materials.

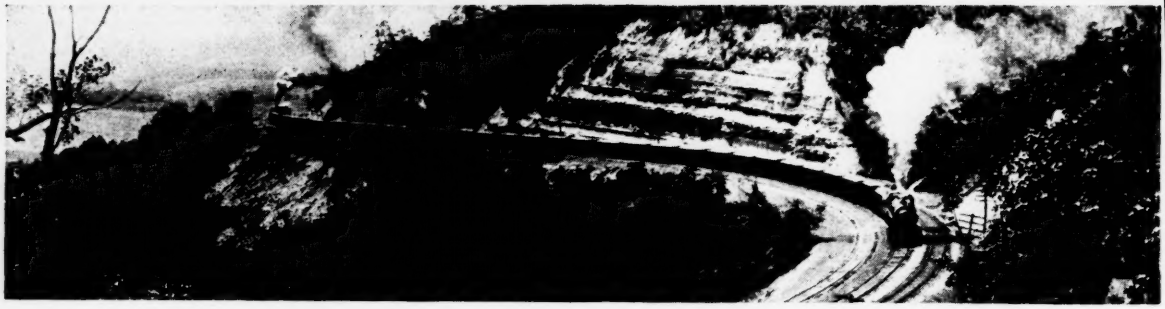
Since weight and bulk of each material varies with each commodity, there are physical difficulties that must be overcome during the various handling operations. In shops and factories there are

(*Continued on page 59*)

Below—Transporting steel girder in yard of Lufkin, Texas, plant of Lufkin Foundry & Machine Co.



* Member of A.S.M.E., Manager Export Division, Hyster Company, Portland, Ore.



Above—Bituminous coal moves across the Alleghany Mountains via Baltimore and Ohio Railroad.

The South's Trade Balance

Sixteen States Receive Greater Tonnage of Agricultural Products than Shipped

by

C. R. Walker

CONSIDERING the South's agricultural position, it may come as a surprise to many to learn that as a shipper of freight over Class I railroads, the region embracing the 16 Southern states receives into its territory a greater tonnage of agricultural products than it ships out.

In 1946, first fully postwar year and typical also of late prewar years, products of the soil entered the South via rail to the volume of 49,989,274 tons. Originating tonnage totaled 38,480,309 tons; showing an excess of incoming over outgoing of 11,508,965 tons.

In the face of the foregoing facts, however, the South is a heavier exporter than importer of freight when commodities of all kinds are considered as a whole on a tonnage basis: In all, 388,203,816 tons of freight originated in the South for rail shipment in 1946; 270,084,833 tons terminated in the South; showing thereby an excess of 118,118,983 outgoing tons over terminating freight.

Analysis shows that plus quantities of minerals and forest products were more than ample to offset minus volumes of farm crop, livestock, and manufactured products.

It will be brought to mind at once that these relationships bear little if any relation to income, either gross or per capita. This is easily apparent from the fact that tons and values are entirely unrelated denominators. For instance, the South's greatest tonnage of incoming farm products consists of wheat. Cotton, on the other hand, constitutes the greatest outgoing agricultural tonnage. One ton of cotton is equivalent in value to about six tons of wheat; so, from an income standpoint the tonnage of one cannot be used as an offset to the tonnage of the other. The same principle works the other way around in the case of Southern mineral shipments. While these mount up to a tremendous excess of outgoing over incoming tonnage, their value will fall far short of counterbalancing an equivalent tonnage of lighter but higher priced manufactured goods.

Analysis of freight tonnage shipped to and from the South is valuable mainly for the purpose of ascertaining whether or not the region is bringing in tonnages that could better be produced at home; and likewise, whether or not it is shipping to other sections resources in the raw state that might prove more profitable if processed at home.

Both questions depend upon a number of factors for intelligent answer. Most of these are of a local nature. What might be true for many communities might not at the same time hold good for all. To get at the question intelligently, it is best to look at the situation when broken down to a state basis. In the following tables, compiled for this purpose, *Plus* Shipments are those in which outgoing exceeds incoming volume; *Minus* Shipments, vice versa:

Southern Rail Freight—1946

Products	*Originating Tonnage*	*Terminating Tonnage*	*Plus Tonnage*	*Minus Tonnage*
Mineral	193,451,903	73,506,933	119,944,970	.....
Forest	44,556,477	34,413,455	10,143,022	.....
Farm Crops	38,480,309	49,989,274	.....	11,508,965
Livestock	4,234,693	4,488,575	.....	253,882
Manufactures	107,480,434	107,686,596	.....	206,162
Totals	338,203,816	270,084,833	130,087,992	11,969,009
Excess of Plus Tonnage	.....	.....	.....	118,118,983

Alabama

Plus Shipments	*Tons*
Minerals	3,383,538
Forestry	2,255,033
Manufactures	1,917,471
Minus Shipments	
Farm Crops	460,014
Livestock	106,657
Plus Balance	6,989,371

Arkansas

Plus Shipments	
Farm Crops	118,202
Livestock	9,519
Minerals	1,775,803
Forestry	1,600,622
Minus Shipments	
Manufactures	264,463
Plus Balance	3,239,683

District of Columbia

Plus Shipments	nil
Minus Shipments	
Farm Crops	292,909
Livestock	117,747
Minerals	2,528,801
Forestry	35,970
Manufactures	1,021,237
Minus Balance	3,996,664

Florida

Plus Shipments	
Farm Crops	1,562,396

(*Continued on page* 58)

Southerners at Work

J. H. Williamson *W. J. Kelly* *P. J. Bowron*

TCI Executive Appointments

Appointment of John H. Williamson as manager of industrial relations of the Tennessee Coal, Iron and Railroad Co., Birmingham, Ala., is announced by Robert Gregg, president of the local United States Steel Corp. subsidiary.

Mr. Williamson, an employee of TCI since October 1, 1925, moves up from the position of assistant manager of industrial relations and succeeds Walter J. Kelly. Mr. Kelly has been temporarily transferred to Pittsburgh, Pa., to serve on a full-time basis as a member of the Board of Conciliation and Arbitration established under the agreement between the steel-making subsidiaries of the United States Steel Corp. and the United Steelworkers of America (CIO). Mr. Kelly is the designee of the Corporation's steelmaking companies on the three-member board, which also includes a member designated by the union and a chairman mutually agreed upon by the companies and the union.

Mr. Gregg also announced the appointment of Paul J. Bowron, formerly assistant to manager of industrial relations, to succeed Mr. Williamson as assistant manager.

Southern States Roofing Promotes Mahany and Nash

Walter J. Mahany, veteran of more than 20 years with the Southern States Iron Roofing Co., Savannah, Ga., has been named vice president of operations for the firm.

Mr. Mahany, who was elected a director of the company last year, will be responsible in his new post for manufacturing, engineering, personnel, property maintenance, construction and branch supervision.

The company also has named Hugh O. Nash as Director of the firm's Birmingham Operations, with headquarters in Birmingham, Ala.

H. O. Nash *W. J. Mahany*

Squibb Names Plant Manager

William H. Roberts, Jr., formerly manager of penicillin and streptomycin production for E. R. Squibb & Sons, has been named general plant manager of the Natrium, W. Va., plant of Glyco Products Co., Inc., which was leased from the U. S. Government last winter, it is announced by E. Rosendahl, executive vice president of the company.

Goodrich Appoints O'Neal

Allan O'Neal, with B. F. Goodrich Co. since 1929, has been named manager of the company's plant in Clarksville, Tenn., it is announced by T. G. Graham, vice president. He succeeds C. R. Spencer, resigned. The plant mainly manufactures rubber soles and heels.

West Virginian Promoted

C. W. Ballard, a native of West Virginia and assistant manager of Hercules Powder Co.'s Explosives Department district office in Pittsburgh, has been appointed manager. Mr. Ballard succeeds John M. Martin, who has been made assistant general manager of the company's Cellulose Products Department in Wilmington, Delaware.

SASI Trustee

E. Willard Berry, of Durham, N. C., head of the department of Geology, Duke University, has accepted appointment to the board of trustees of the Southern Association of Science and Industry, it is announced by Homer M. Pace, of Charleston, president of SASI.

Heads Columbia C of C

Robert Mobley, associated with the Columbia, S. C. Chamber of Commerce for the past 16 years as membership secretary, assistant secretary and finally secretary, has been made executive head of the organization.

Wise Elected Vice President Of Central of Georgia

Organization of a new department of industrial development and election of Marion J. Wise as vice president to head the new department has been announced by the Central of Georgia Railway Co. Occupying a newly created position, Mr. Wise will engage in development of industry in the Central of Georgia's territory. He also will head the Ocean Steamship Co. and will arrange for resumption of that line's service which has been temporarily suspended.

Loan Agency Manager

RFC Chairman, John D. Goodloe, has announced the appointment of Thomas M. Hobbs as Manager of the Nashville Loan Agency of the Corporation to succeed J. M. Gardenhire. Mr. Gardenhire, who has been Manager for the past fourteen yars, has resigned because of ill health.

Cabinet Appointee

President Truman has announced the appointment of Gordon Gray, Winston-Salem, N. C., publisher and attorney, as Assistant Secretary of the Army.

Mr. Gray's principal duties will be to handle relations between the Department of the Army and other departments of the Government.

New Southern Company Opens Atlanta Office

JAMES F. CRIST, vice-president of the newly organized Southern Company, has announced the company has opened its offices in the William Oliver Building, Atlanta.

Recently authorized by the Securities and Exchange Commission, the Southern Company, according to Mr. Crist, provides a means for retaining under common ownership four major southeastern electric utility companies and for raising equity capital for use in the tremendous construction program which these com-

(Continued on page 46)

J. F. Crist

Southern Company Office

(*Continued from page 45*)

panies now have under way. Alabama Power Company, Georgia Power Company, Gulf Power Company, and Mississippi Power Company comprise the operating companies in the group.

Coordinated operations and planning in the Alabama, Georgia, Mississippi and Florida properties, result in very substantial savings in operating costs and fixed charges, Mr. Crist stated. There is an operating committee, Mr. Crist said, which includes operating men from each company; and this committee closely coordinates the operation of all of the power plants on the system. Approximately half of the system's generating capacity is hydro, he said, and the central load dispatching agency in Birmingham so operates the reservoirs, hydro and steam plants as to obtain maximum utilization of water. The steam plants, he said, are brought on in the order of their economy. Since power generated at any point on the system is available, through the integrated transmission network, to any other point new plants are located with reference to the place of cheapest operation as well as needs for power. This integrated operation, Mr. Crist declared, is largely resposible for the fact that homes in the area served by these companies use, on the average, a third more electricity and pay an average price 25% less than homes over the nation as a whole.

Eugene A. Yates, for many years a resident of Birmingham, and formerly chief engineer and general manager of Alabama Power Company, is president of the Southern Company. Mr. Yates, more than thirty years ago was conspicuous among those who foresaw the possibilities of an interconnected system of dams and steam plants and radiating transmission lines in the Southeastern states, and the present system largely planned and built under his supervision, is recognized as one of the best coordinated power systems in America. Last June the board of directors of Alabam Power Company, at a widely attended ceremony, named its Upper Tallassee hydroelectric plant on the Tallapoosa River, Yates Dam, "in recognition of his vision in foreseeing the possibilities of the development and distribution of power in the Southeastern states, his ability as an engineer and administrator.

IBM Makes Promotions

J. G. Phillips, vice president and treasurer of International Business Machines Corp., has been elected executive vice president and Thomas J. Watson, Jr., vice president and director, has been elected to the executive and finance committee. A. L. Williams, controller, has been elected treasurer; Herbert T. Hansford, assistant controller, is raised to the controller post and Bernard Wiegard, general auditor, becomes assistant controller.

Mr. Phillips, who is a director and a member of the executive and finance committee, joined the corporation in 1918. Mr. Watson's service with IBM dates to 1937 when he started as a student sales representative, a position also held by Mr. Williams when he joined the corporation in 1936. Mr. Hansford was initially a cost accountant and Mr. Wiegard also was a member of the accounting department.

J. G. Phillips *T. J. Watson, Jr.* *A. L. Williams*

George F. Hardy

The paper industry lost a valiant developer with the death last month of G. F. Hardy, designer of the plant at Lufkin, Tex., the first mill to make newsprint from Southern pine.

Mr. Hardy, age 82, expert engineer-designer of many topflight pulp and paper mills, died in St. Luke's Hospital, New York City, after an illness of several weeks.

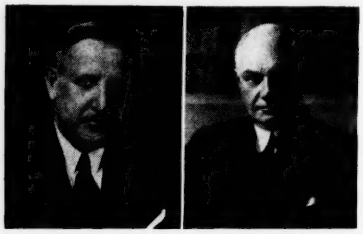
He was senior partner of George F. Hardy & Son, consulting engineers, 441 Lexington Ave., and his home at the time of his death was at 270 Park Avenue, New York City. A graduate of Dartmouth, Honorary SC. D., Mr. Hardy was one of the oldest Dartmouth Alumni.

Cort Made Vice President by Bethlehem Steel

Quincy Bent, retiring vice president in charge of steel division operations for Bethlehem Steel Co. is being succeeded by S. J. Cort, general manager of the company's Sparrows Point, Md. plant. Mr. Bent will continue as vice president in an advisory and consulting capacity, and as a director until the end of 1947.

E. G. Grace, Bethlehem chairman, who made the announcement commended Mr. Bent as one of the outstanding men in the steel industry and as being responsible for our steel plant and fabricating works development and activities, including the work of industrial research.

Mr. Bent's successor, Mr. Cort, is a graduate of Lehigh University, obtaining his early experience at the Cambria plant of Midvale Steel and Ordnance Co., Johnstown, Pa. Appointed superintendent of the Saucon open hearth division of Bethlehem in 1917, he was made Sparrows Point general manager in 1928.



S. J. Cort *Q. Bent*

Baltimore Laboratories Dedicated by Locke

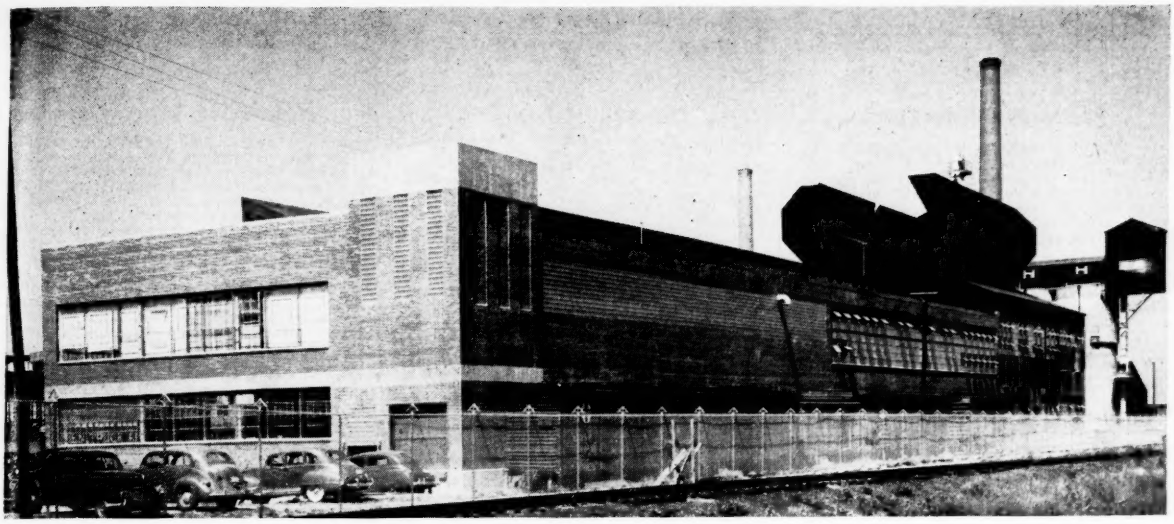
DEDICATION of two laboratories several weeks ago drew many leaders in the electrical manufacturing and power industries to Baltimore to see what science proposes to do toward improving the design and quality of one of the important but little heralded factors in power transmission and distribution, the porcelain insulator, whose ingredients have been one of the neglected orphans of research.

The group, which was welcomed by R. G. Bellezza, president of Locke Insulator Corp., where the laboratories are located, included Charles E. Wilson, president of General Electric Co.; William Schmidt, Jr., president of Consolidated Gas Electric Light and Power Co.; C. M. Gray, president of Baltimore Transit Co.; J. S. Thompson, president of Pacific Electric Manufacturing Co.; E. R. Acker, president of Central Hudson Gas & Electric Co.; Claude L. Matthews, president W. N. Matthews Corp., and W. Preston Lane, governor of Maryland.

Highlight of the dedication was an address delivered by Mr. Wilson, who pointed out that the "amount of formal industrial research being done in the United States in 1940 was ten times the amount done in 1920" and that General Electric was in a position to record this growth because its laboratory was established early in the century.

Research was described by Harry A. Winne, a General Electric vice president, as the first step in transforming materials into useful products and services. The engineer can progress in his goal to utilize materials and principles for the good of mankind, he observed, "but for his maximum rate of accomplishment he needs and must have the aid and support of research."

One of the laboratories is a new ceramics research unit named for Fred M. Locke, founder of the Locke Insulator



Above—First of two new plants of Pittsburgh Corning at Sedalia, Mo.

Corp., a General Electric affiliate, and the other, an existing high voltage laboratory christened for Frank H. Reagan, a chairman of the board of that Baltimore firm which pioneered in the manufacture of porcelain insulators.

The Reagan electrical laboratory was established eight years ago. Since then it has participated in many investigations of the electrical and mechanical characteristics of insulators and in the development of more effective designs. An outstanding accomplishment is the long strings of insulators used on the experimental transmission line now being tested along the Ohio River south of Steubenville, where 500,000 volts, the mightiest electrical pressure ever used in transmission, surges along the power industry's electrical "superhighway."

In the new ceramics laboratory is where the company's hopes are centered for assembling the scientific data on which to base the insulator of the future. Ceramics dates back to the pottery of the Egyptians and Chinese.

Locke Ceramics Laboratory.

Missouri Glass Block Plant Opened

by L. H. Houck

THE Sedalia, Mo., block plant of the Pittsburgh Corning Corp., one of two such plants in the United States, was officially opened Sunday, September 28, when it was host to nearly 20,000 visitors.

Operating seven days a week and 24 hours per day, the new block plant is of tremendous importance in the industrial and economic life of this section of Missouri, since it is not only a stepping stone in decentralization, but also the beginning of an industrial era for the agricultural section of Missouri.

A second plant is nearing completion adjacent to the block plant, which will manufacture foam glass for insulation. This plant is scheduled for completion by January 1 and is now ahead of schedule. Machinery is to be installed and operation started by April. Foam glass is a product developed by the company in 1942. It will be produced in many sizes and thicknesses to suit standard dimensions in building construction. This product is light, brittle and remains in the shape formed. It is virtually impervious to heat, cold or water conditions. A temperature of 1100 degrees F. is required to break it down. Its lightness is an asset, too, since it may be used without regard to extra weight involved on structural members.

Between the two plants, the glass block plant and the foam glass plant, is room for erection of a third plant, which will be built sometime in the future. The factory site consists of about 100 acres on which many more plants may be built if the need arises.

Both plants use several restricted or exclusive processes in the making of the product, developments of the Pittsburgh Corning Co. O. W. Wiley is general manager of the plant.

The only other such plant is located at Port Allegheny, Pa.

C. E. Carroll, construction supervisor, said the use of the glass foam on a steel roof represented the first installation of its kind and tests proved it to be practical and desirable. The steel roof was coated with asphalt before the foam glass blocks were installed.

General contractor is the H. K. Ferguson Co., Cleveland, which also erected the steel. The electrical contract for both plants was in the hands of the Allegheny Industrial Electrical Co., Pittsburgh, A. F. Stiffler, superintendent.

Pittsburgh-Des Moines Co., Des Moines, is erecting a 100,000 gallon steel water storage tank, to be used as a standby for fire protection.

Rust Engineering Co., Pittsburgh, erected two 138 foot brick smoke stacks.

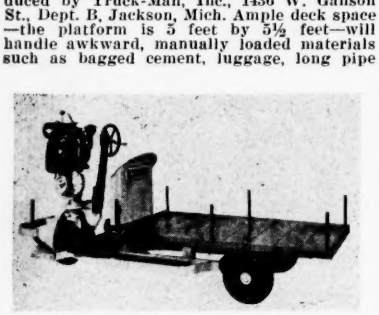
Carroll Engineering Co., Akron, Ohio, has the contract for the ventilating system and duct work.

Toledo Engineering Co., Toledo, Ohio, built the glass tank and furnace for the block plant and has the contract for the same job on the foam glass plant.

New Products

Platform Utility Truck

A platform utility truck designed for odd-jobs in material handling has been introduced by Truck-Man, Inc., 1436 W. Ganson St., Dept. B, Jackson, Mich. Ample deck space—the platform is 5 feet by 5½ feet—will handle awkward, manually loaded materials such as bagged cement, luggage, long pipe



Platform Utility Truck.

or bar stock, tote pans, tools and even permanent equipment up to a conservative 1,500-pound capacity.

The truck is recommended as a mobile unit which can be equipped with permanent fire fighting apparatus for plants and small airports, or with factory maintenance tools, pressure greasing unit or other service facilities. It also should be useful in warehouses, freight terminals, railroad docks, shipping departments and airports or wherever bulky loads are handled.

Revolving Clamp

A unique frame clamp used in the manufacture of furniture, office equipment and related industries, is announced by Kemp Machinery Co., 211 President St., Baltimore, Md. The particular characteristic of this clamp is that the operator stands in one position instead of walking around the clamp, and the clamp itself revolves so as to bring each corner in position for glueing, tacking, welding or other operations. A four-page descriptive bulletin has been issued by the company, outlining the advantages of this new device which is claimed to be versatile, low in maintenance cost and of maximum productive capacity.

Labor Saving Truck Body

Designed and patented in 1941 by the Belknap Hardware & Manufacturing Co., Louisville, Ky., world's largest wholesale hardware jobber, an ingenious time - and labor-saving body enables each of the Company's Mack trucks to do the work of several equipped

Truck at Belknap Plant.

with conventional bodies. The castered body, in the shape of a large freight box, can be rolled on or off the truck by means of the rear-mounted winch, while a hydraulic hoist at the rear elevates the channel steel track to clear any loading dock. A safety catch holds the box in place while the truck is in motion. Dock personnel perform the only hand operation involed—the attaching and detaching of the winch cables. All other action is controlled from the cab by the driver, with power supplied by a power takeoff from the engine.

Truck in the accompanying photograph is shown in front of the company's warehouse which covers 40 acres on one floor.

"One-Way Mirrors"

"One-Way mirrors"—the optical illusion glasses used by cloak-and-dagger men during the war for observing the antics of subversive suspects and for numerous secret operations where it was advantageous for the special government agents to see and not be seen—will be offered for home and industrial applications, it is announced by W. R. Harper, manager of plate glass sales for the Pittsburgh Plate Glass Co., Pittsburgh, Pa.

Known variously as "transparent mirrors," "X-ray mirrors," and "one-way vision glass," the mirrors are produced by evaporating chromium in a vacuum, causing the vaporized metal to condense on the surface of the glass.

"The ability to see through transparent mirrors in one direction only is entirely due to the difference in light intensity on opposite sides of the glass," according to the Pitts-

The "one-way mirrors" are being furnished in polished plate glass 13/64" thick in three sizes, 12" x 40", 20" x 40", and 30" x 40", it was stated.

Plastic Packaging Film

A new type of plastic packaging film is being made in Gary, Ind., aided by a continuous stainless-steel belt more than 300 feet long.

The film, called Reynolon, is made by Reynolds Research Corp., using Geon latex, a product of B. F. Goodrich Chemical Co., as the basic raw material. It is cast on the endless steel band, heated, cooled, then stripped and wound in rolls, in a continuous process. Described as clear and tough and especially suitable for food packaging where automatic equipment is used, Reynolon can be electronically heat-sealed or sewed. It is available in gauges from one to three thousandths of an inch, controlled to within two ten-thousandths in thickness.

The material is cast from a "colloidal dispersion of polyvinyl chloride plastic in water." It can be modified to any degree of stiffness or softness, has glass-like clarity, and can be made in colors, Reynolds engineers said.

Prewar Quality Hose

Hewitt Rubber Division, Hewitt-Robins Inc., Buffalo, N. Y., has announced the resumption in production of its Maltese Cross fire and chemical hose after being withheld from manufacture during the war because of government restrictions on the use of premium quality materials.

J. H. Hayden, vice president in charge of sales, said the lifting of government restrictions and the availability of special long staple cotton necessary to produce the high tensile duck has enabled Hewitt to reinstate this prewar brand of hose.

A few of the features of Maltese Cross fire hose include: Very special long-staple, thin gauge, high-tensiled duck which makes the hose very light in weight, easily coiled, combined with high burst resistance. Special chemical treatment protects the duck against deterioration by mildew while the rubber cover eliminates the necessity of drying after use. Highest quality rubber tube and cover compounded to withstand oiling for long periods without cracking. Rubber cover protects the duck carcass from acid fumes and oil.

Milling Machine

Kennametal Inc., Latrobe, Pa., has just introduced its "Axial Face Kennamill" designed especially for production milling of cast iron, and suitable for light to medium cuts on solid or cored castings.

This new mill incorporates the advantages of solid blade face mills with maximum number of blades.

Blades can be assembled to within a few thousandths on the face and periphery, and they do not move during tightening.

Sharpening is simplified because of the open construction of the cutter, freedom from brazing strains, and because there are only three surfaces to grind.

The cutter can be mounted on all common spindles with bolt circle provided to order. The body is shaped to permit grinding a 45° corner angle for milling light cored sections, and is sufficiently over nominal diameter to cut full width when so ground.

Five sizes are now available: 6", 8", 10", 12" and 14".

Auto-Soler Improved

The Auto-Soler Co., 267 Marietta St., N. W. Atlanta, Ga., have announced a new model of their auto-soler, called the Speedmaster. They have also issued a descriptive folder describing this device, along with their auto nailer, an automatic machine that greatly reduces the time and labor involved in driving nails. In the new Auto-soler, all moving parts are enclosed to insure safety and cleanliness. The machine is featured by an improved wire feed that speeds up the soling operation. The new model is described as of sturdier construction throughout, and enjoying a number of other improved features.

Plexiglas Machine Templets

An innovation in the field of plant layout technique is the introduction of Plexiglas Magne-Plastic machinery templets fashioned by John Hill Layouts, Mount Clemens, Mich.

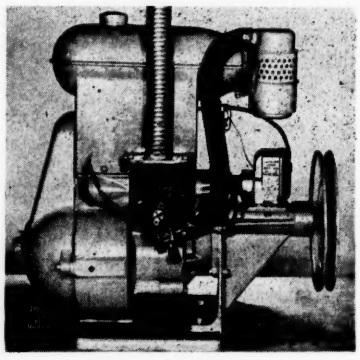
These templets are said to provide permanent facsimiles, scaled to size, of machines and equipment. These are used in conjunction with a thin, transparent plastic layout mat, ink-scribed in ¼-inch squares (each representing 1 square foot), on which an outline of the building or plant area can be drawn.

The templets are made from sheets of crystal-clear, shatter-resistant Plexiglas, coated on one side with a photographic emulsion. Scaled drawings of machinery and equipment are reproduced as negatives on this exposed and developed emulsion. These accurately scaled machinery outlines are then cut to exact shape from the Plexiglas sheet. The result is a durable templet of transparent plastic, on the underside of which is an outline on black of the machine with necessary identification marks.

Lightweight Motor

Introduction of a compact lightweight stationary motor for farm, home and light industrial applications was announced today by Joseph W. Frazer agency, president of the Graham-Paige Motors Corp, York, Pa.

Known as the "Frazer," the engine is a



Frazer Stationary Motor.

five horsepower, two-cycle single cylinder gasoline type with impulse-coupled magneto for easy starting, the announcement stated. It will run from six to eight hours on two gallons of gasoline, depending on the amount of work performed, Mr. Frazer revealed.

The motor, he pointed out, is essentially the same as that used in Graham-Paige's Rototiller farm machines. Mounted on a metal base plate and fitted with a V-belt pulley power take-off, the engine occupies less than three square feet of floor space and consequently can be fitted into smaller spaces than most stationary motors.

Selenium Rectifier

A selenium rectifier that maintains constant voltage regardless of the changing amounts of current drawn from it has just been marketed by a Chicago electrical concern.

This rectifier was constructed to handle large gangs of low voltage D. C. magnets in varying loads of from zero to 20 amperes with no appreciable variance in voltage. The D. C. voltage control will maintain or in-

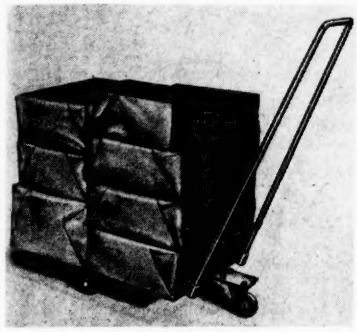
crease the starting voltage until the full amperage has been drawn from the rectifier, in contrast to the ordinary rectifier in which the voltage drops as the current is increased.

The rectifier itself is a full-wave bridge type suitable for any A. C. frequency and a line voltage of 115 to 230. The pulsating D. C. is filtered about 25%, but a smoother current can be supplied if necessary. The rectifier occupies about a cubic foot of space.

All inquiries are being directed to Mr. Austin W. La Marche, of the La Marche Manufacturing Co., 6525 Olmsted Ave., Chicago 31, Ill.

Package Truck

The Scott Aviation Corp., Lancaster, N. Y., announce the acquisition of the manufacturing and sales rights of the "Easy-tote" Products Co., formerly of Arcade, New York. Scott is now manufacturing the "Easy-tote" departmental truck. Scott also announces a new model departmental package truck. Known as the model F-811, this new truck



Easy-Tote Package Truck.

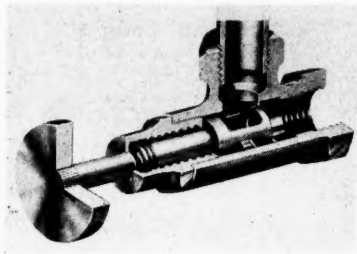
has a platform 16" x 22", and is 2" from the floor for loading and unloading. Equipped with 3" needle bearing wheels, the front wheel is caster type which permits turning in its own length and will transport 400 pounds with a generous overload factor. The model F-811 is now available for immediate delivery. Further information may be had by writing the Materials Handling Division, of the company.

Seatless Valve

The new "20th Century Seatless Valve" announced by Knowles-Fisher Corp., Gowanda, N. Y., incorporates a new design that eliminates the valve seat, washer and all wearing parts.

The valve opens and closes with a flick of the fingers, without mechanical pressure.

The design consists of a highly polished stem that engages with two wear resistant synthetic rubber collars—one at each end of the valve. In opening, the stem is withdrawn from the lower collar, permitting an even



20th Century Seatless Valve.

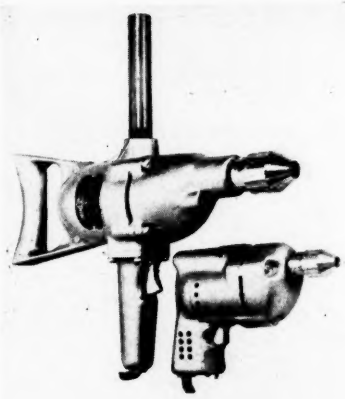
flow of liquid through the outlet. The stem is retracted into the upper collar forming an absolute seal and preventing any moisture from entering the activating threads.

The valves are available in a complete line, and full information may be had from the manufacturer.

Vulcanized Arcing Chamber

An arcing chamber that is a vulcanized fibre fabrication which is said to simplify the construction of circuit breakers and prevent arc-over between poles or to ground has been manufactured by the N. S. Baer Co. of Hillside, N. J.

Electric Drills



Black & Decker Drills.

To meet the mounting demand for popular-priced tools brought about by a rapid increase in farm mechanization and a growing interest in mechanical home work-shops, The Black & Decker Manufacturing Co., Towson, Md., has introduced a new line of "Home-Utility" portable electric drills.

The "Home-Utility" drills are available in ¼-inch and ½-inch capacities. They drive twist drills, wood drills, hole saws, countersinks, wire brushes, abrasive pads and sleeves.

The new "Home-Utility" drills are designed for wide use in building and repairing home furniture; installing hardware and fixtures; repairing electrical, heating and plumbing appliances, garden tools and radios; repairing farm tractors, trucks, machines, tools, wagons, harnesses and rigging, and doing general farm construction and repair work.

Both drills are powered by universal motors which use either alternating or direct current. They have strong, light, die-cast aluminum housings . . . sturdy gears, pinions and bearings . . . instant-release trigger switch . . . fast-operating Jacobs chucks . . . three-wire electric cord for ground connection. The ¾" drill is compact and close-coupled for close-corner work, with a comfortable, hand-fitting shape. The ½" drill has a spade and handle and removable pipe handle.

"Home-Utility" bench stands for each model convert the drills into drill presses for operation on delicate work; for leverage in tough drilling; for drilling to a predetermined depth; for correct spacing of multiple holes in a strip or plate.

Gas Detector

For the determination of hazardous conditions due to the presence of combustible or explosive concentrations of flammable gases or vapors, the Davis Emergency Equipment Co., Inc., 45 Halleck St., Newark 4, N. J., manufacturers of gas detection and alarm equipment announce a new supersensitive Vapotester. The new Model 6 is a two range instrument that increases the sensitivity tenfold.

One range analyzes combustible gases in terms of their lower explosive limit. A second scale indicates gases in their toxic range.

The basic principle of the Vapotester indicator is the measurement of increases in the resistance of a filament when exposed to a gas or vapor-air mixture as compared with a filament not exposed to such gas or vapor-air mixture.

The two filaments, as two legs of a balanced Wheatstone Bridge circuit, are housed in a single cell block having two chambers. The comparison filament is completely sealed in its chamber. The analyzing filament is housed in an open chamber that permits air or gas to be drawn through it.

Arc Welder Kit

A recent development in the build-your-own-welder field is the new Atomic arc welder kit.

According to the manufacturers, this kit includes all parts ready-made, and requires no special experience, tools, or jigs. Anyone can assemble their own heavy-duty welder in a few hours. The only part the buyer actually builds is the outside case. According to preliminary market research, buyers use welder to build cases from scrap sheet-metal or steel. Case can also be constructed of wood or fibre board.

The kit comes complete with 65 pounds of ready-made parts, and easy-to-follow instructions for assembling, and when completed can handle up to ⅛-inch electrodes. Operates on 110 or 220 AC current. It is manufactured by Atomic "Arc" Welding Co., Omaha, Neb.

Engine Heater

The Superfex "all-purpose" engine heater, a new development of Perfection Stove Company, Cleveland, Ohio, works from the inside out, by heating the engine coolant, unlike heaters which are merely radiators drawing their heat from the engine.

Also, by utilizing the heat from exhaust gases and by adding a hot air or external liquid heat exchanger, the heat generated serves to warm the oil, battery, cab, cargo and other parts of the equipment. An auxiliary heater, it operates independently of the engine.

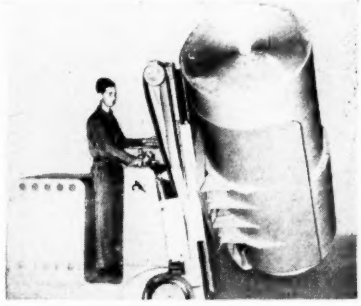
The Superfex engine heater was designed primarily for use with equipment which is exposed to the elements for long periods during the cold months. It can be installed on practically all types of motor power—trucks, tractors, locomotives, power plants, gasoline and diesel engines, farm equipment, road building machinery, contractors machinery and automobiles.

Fork Truck Attachment

A hydraulically operated rotating carriage has been recently added to the Lewis-Shepard line of special attachments for their power fork trucks. It can be installed on their electric, gasoline, or gas-electric models and is compact in design keeping the load close to the front wheels for maximum utilization of the inch pound rating of the truck.

When used in conjunction with the paper roll attachment, only 90 degrees of the full rotation is required. Adjustable stops are used to limit travel in this manner.

The paper roll attachment for use with this rotating carriage consists of a full curved backplate, designed to fit the contour of the rolls, and a polished and ground toe plate with a beveled leading edge for entering under the headings of paper rolls without damaging



Lewis-Shepard Attachment.

them. No pallets or dunnage are needed and rolls may be picked up in a vertical position and deposited horizontally or vice versa.

Other attachments for this rotating carriage consist of a partial backplate, toeplate and forks for handling paper rolls and conventional forks in conjunction with a bin or dump box for picking up small castings, scrap metal, coal, sugar, or grain and dumping the contents where desired. The products are made by Lewis-Shepard Products, Inc., 291 Walnut St. Watertown 72, Mass.

Meat-Preparing Devices

A sausage filling machine, a deriding machine, and a mincing machine, examined by British investigators in a German meat processing plant incorporate unusual features according to a report now on sale by the Office of Technical Services, Department of Commerce. The report was prepared for the British Intelligence Objectives Sub-Committee.

The electric sausage filling machine is unusual because it operates with a gear driven piston in contrast to the hydraulically activated piston in common use. The piston travels at two speeds, the slower speed for the filling operation, and the faster speed when the piston travels in a downward direction. The gear drive is said to eliminate possible oil contamination of the sausage meat.

The "Omega" deriding machine for fat sides, backs, and bellies, consists of a rectang-

(*Continued on page* 50)

New Products

Meat Preparing Devices

(*Continued from page 49*)

ular guide 27" x 14" which can be lifted rapidly between two adjustable knives using a 1½ horsepower motor. The fat backs, sides, or bellies are attached to steel spikes on the top ridge of the guide plate with the rind flat against the plate. The plate is then at its lowest position. Movement of a small lever engages the clutch and the plate rises rapidly between the knives which slice the rind off in one piece. The plate is then released automatically and returns to its original position, removing the rind from the plate.

The novel feature of the "Adler" mincer is a slowly moving spiral at the base of the hopper which feeds the material on the main screw at an angle of 90 degrees. The spiral, made of ¾ inch square section rod is about 2 feet long and 3¾ inches in diameter. It is activated by a chain and worm drive from the main shaft. The advantages of the design are said to be greater production (since the spiral feed eliminates the need for manual pressure on the meat to be minced), greater operating safety, and ease of cleaning.

Heavy Duty Floor

A new heavy-duty floor for use in the transportation field is being placed on the market by the Industrial Division of the Armstrong Cork Co., Lancaster, Pa. The latest addition to the Armstrong Line, trademarked Acolon, is a wear-resistant synthetic polymer calendered onto a quality burlap backing. It presents, in addition to long wear, a non-skid surface, dimensional stability, a wide color range, and easy installation.

Seven color choices are available, most of them in both ribbed and plain styles. The ribbed patterns are offered in rolls 60" wide, .140" thick, and may be obtained in black, green, blue, brown, or terra cotta. Plain colors are to be sold in rolls 72" wide, .125" thick, in black, green, blue, brown, white, and red.

Masonry Saw

Newly introduced is a revolutionary new masonry cutting saw for precision cutting of all kinds of masonry and ceramic products, without damaging clouds of dust, inherent in cutting masonry of the past. Introduced at the same time were "Jade" masonry cutting blades for dry cutting; "Ruby" masonry cutting blades for wet cutting, and the Champion D-100 and D-250 diamond impregnated blades.

The improvement gained with this new masonry cutting saw was the ability to accurately and speedily cut masonry or ceramic products either wet or dry, and the manufacturer, Champion Manufacturing Co., St. Louis, Mo., stresses that the right blade be used on the right material. Probably the most revolutionary feature, is the ability to operate this saw as a wet cutter as well as a dry cutter. The wet cutting feature not

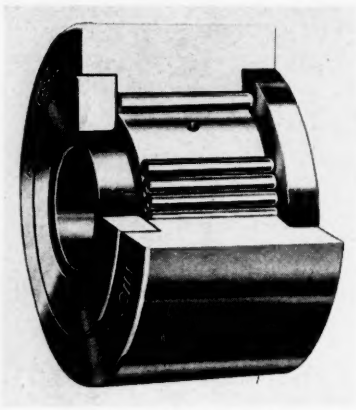
Masonry Cutting Saw.

only materially reduces cutting costs by eliminating much of the frictional heat generated by the blade but also keeps down the dust so prevalent in masonry cutting.

This prevention of dust clouds is of utmost importance in safe-guarding against the silicosis hazard, abrasive injury to other machinery, and heretofore dissatisfaction of dry-cutting masonry inside buildings.

Another feature introduced by this new saw was portability. This meant users could remove the legs and carry the saw from job to job, actually doing the cutting when and where required. This feature permits the saw to be taken inside fireboxes, kilns and other confined spaces.

New McGill Roller Bearing



McGill Multirol Bearing.

The Bearings Division of the McGill Manufacturing Co. Inc., Valparaiso, Ill. has recently put on the market its newest full type roller bearing, the Cam Yoke Roller, designed, primarily, to increase cam follower adaptability. However, the construction of this roller allows uses other than actual cam follower applications with the stud replaced by an inner race to accommodate a full range of shaft sizes from a .250 bore. diameter for the CYR 3/4, to a 1.250 bore diameter for the CYR 4".

This bearing is precision built, all dimensions being held to uniform ABEC tolerances, and the design of full type roller bearings having a full complement of small diameter maximum length rounded end rollers is adhered to in every particular. All parts are specially heat treated to resist the possibility of race fracture from heavy shock loads that are present in numerous cam, guide and support roller applications. An extra heavy outer race section is maintained on all sizes for this same protective purpose.

McGill Bearings are available in the Southeast from the Moffatt Bearings Co., which maintains branches in Baltimore, Richmond, Charlotte, Atlanta, and Birmingham.

Industrial Wheels

A complete line of industrial wheels for both high and low speed applications is now offered by the Gar-Bro Wheel Co. of Los Angeles, Calif. Available in a wide range of sizes, these wheels are suitable for carts, wagons, wheelbarrows, scooters, trailers, materials-handling equipment and many other uses. Both the drop center disc wheel and the lug base type are offered.

According to the manufacturer, the wheel design has several advantages, including a bell-shaped disc which offers greater resistance to side thrust. The wheels are light in weight, yet strong, and are able to stand 6 to 8 times the allowed tire load.

The discs are stamped from cold rolled stamping steel. Heavy duty wheels are equipped with Timken Bearings. All wheels are enameled in glossy black and need no extra finish unless the user so desires.

Ice Cubing Machine

Flynn & Emrich Co., Baltimore 3, Md., announce an ice cubing machine believed to be the only one of its kind on the market. A special feature is the employment of hydraulic power, together with a valve assembly. The hydraulic device is a means for moving the ice cake through the saws as it is being cut into cubes. Located on top of the machine is the hydraulic ram and the valve assembly. The ram is powered by an hydraulic pump driven by the same motor that drives the saws. The flipping of a valve lever starts the machine in operation, and the container holding the ice block is moved backwards and forwards the full length of the machine, turning 90 degrees at the end of each stroke. The company also manufactures an extensive line of underfeed and overfeed stokers, as well as the three models of ice cubers.

Dry Cleaning Outfit

Industrial Manufacturing Co., San Antonio, Tex., announce the development of a complete dry cleaning plant complement. Five units make up the complement, and these are represented to be of durable construction, built to last a lifetime. This equipment supplements an extensive line of laundry and dry cleaning equipment which includes an industrial motor-driven dry room, an industrial solid curb, ball bearing extractor, and industrial laundry washers of various designs. Illustrated literature and price lists are available from the company, 415 Carolina St., San Antonio 3, Tex.

Spiral Conveyor

A new design of cover and T-head bolt for Spiral Conveyors is being announced by The Jeffrey Manufacturing Co., Columbus, Ohio. The cover is flanged, providing a smooth rounded edge and adding stiffness which permits the use of fewer bolts than heretofore. Slotted holes in the cover permit it to pass over the T-head bolts without removing them. By simply giving a quarter-turn to these spring-mounted T-head bolts the cover is locked securely. It may be as easily removed by reversing the procedure. All Jeffrey Spiral Conveyor fittings conform to the new Industrial Standard dimensions.

Heavy Duty Jack

Offered in 20, 30 and 50-ton capacities, heavy-duty hydraulic power jacks with tandem pumps are made by the Walker Manufacturing Co., Racine, Wis.

The jack can be used for bending, straightening, pushing and lifting. The unit's special pumps bring the jack into contact with the work.

One pump moves a ram faster than the power pump. When load has been contacted, the power pump carries on, as the speed pump is automatically cut out. Because both pumps work from the same handle socket, no re-positioning of the handle is needed.

Label Adhesive

A synthetic resin-latex emulsion cement has been produced by Paisley Products, Inc., Chicago and New York, which is said to have the ability to permanently adhere ungummed paper labels to a wide variety of surfaces and surface finishes. Designated No. 1707 by the makers, it is being offered for fastening instruction labels, circuit diagrams, caution and brand labels to electrolytic tin plate, terne plate, varnished, lacquered, painted and enameled surfaces; also for many combining and laminating operations on similar and dissimilar materials, such as cork to metal, felt to cardboard, paper to glass, ceramics, many plastics and other applications. Typical field uses include labeling of refrigerators, household appliances, radio chassis, tin cans, lacquered pails and drums, over printed areas of folding cartons and displays.

Packaging Material

A three-dimensional puffed glass fiber decorative, whose spongy resiliency and special corrugated construction also make it an excellent packaging material, has been developed by the Radiant Glass Fibers Co., 208 East 27th Street, New York City.

Used as a display material under direct lighting, it gives the appearance of sparkling snow. Instead of being rigid like many synthetic snow materials, it is resilient, state the makers.

Shingle Coating

A new coating for cement asbestos shingles and siding has been produced by the A. C. Horn Co., Inc., 43-36 Tenth St., Long Island City, N. Y.

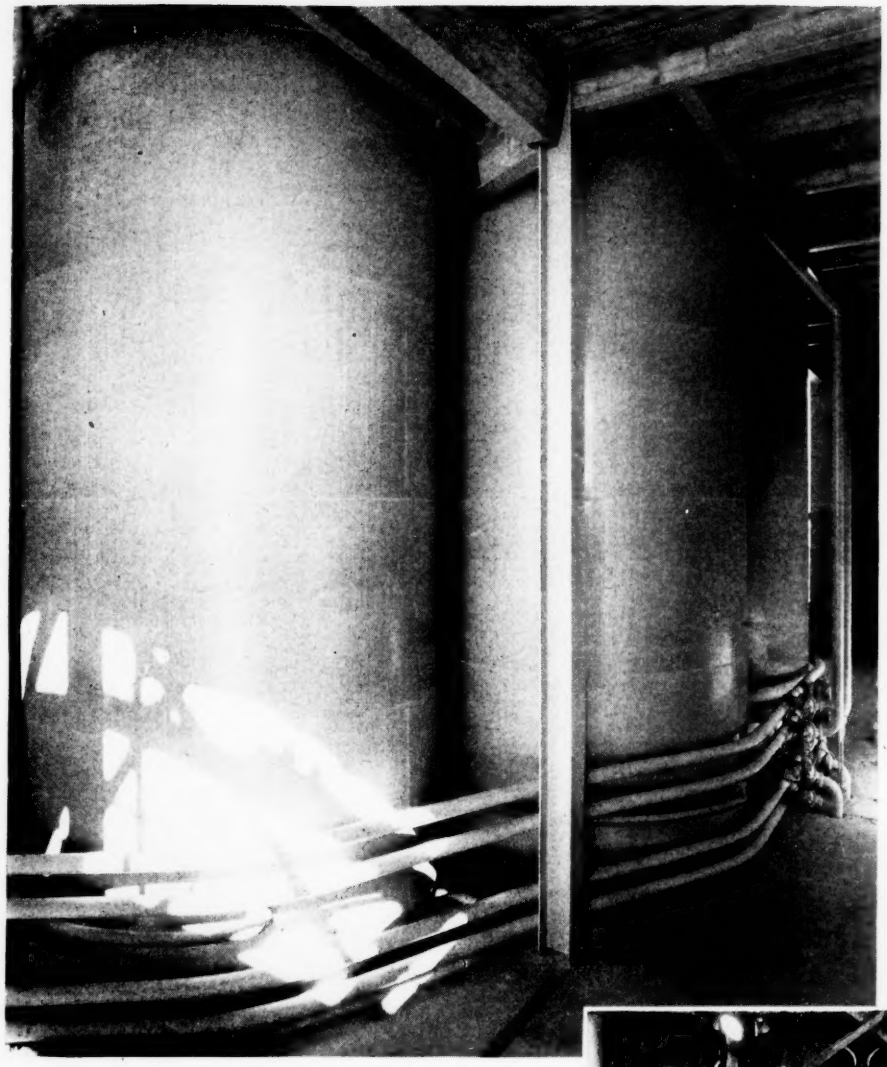
The new development—called "Horn-O-Kote"—increases water-proof and durable qualities. The new chemical product is a coating that bonds chemically and physically to the asbestos siding, say the makers.

One gallon covers approximately 300 square feet. It comes ready mixed, requiring no thinner. A stiff brush is used in applying it.

Rotary Stone Drill

A new drill—the Concrete Termite rotary drill—depends on a new patented rotary pulverizing action rather than sharp cutting edges or hammer-like blows to drill straight

(*Continued on page 52*)

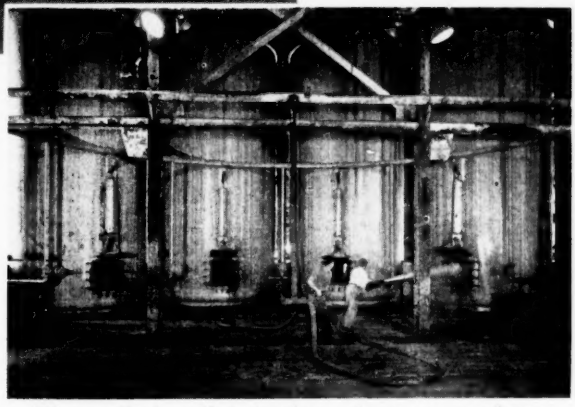


SIX MORE CB&I-BUILT DIFFUSERS

. . . Southern kraft mill duplicates installation of ten years ago to double its pulp washing capacity.

THE above photo shows three of the six 14-ft. 6-in. diam. by 33-ft. 4-in. diffusers we recently erected at a kraft mill in the South. The diffusers are arranged in a semi-circle to form a complete circle with six identical units we built ten years ago for this mill. There is a cyclone separator located above the diffusers. Pine chips are cooked in digesters (which we also built). The pulp and liquor is blown into the separator and drops by gravity through a swivel piping connection into one of the diffusers. Then the pulp is washed with clear water and the black liquor is drained off.

We design, fabricate and erect many types of steel plate structures. *Why not call us* on your next steel plate requirements?



The small view directly above shows two workmen directing a stream of water into one of the diffusers to start the flow of pulp.

CHICAGO BRIDGE & IRON COMPANY

Atlanta 3 .....2145 Healey Building	Chicago 4 .....2106 McCormick Building
Birmingham 1 .....1530 North Fiftieth Street	San Francisco 11 .....1240-22 Battery Street Building
Houston 1 .....5614 Clinton Drive	Philadelphia 3 .....1619—1700 Walnut Street Building
Tulsa 3 .....1611 Hunt Building	Los Angeles 14 .....1417 Wm. Fox Building
New York 6 .....3313—165 Broadway Building	Havana .....402 Abreu Building
Cleveland 15 .....2216 Guildhall Building	Detroit 26 .....1510 Lafayette Building

Plants in BIRMINGHAM, CHICAGO and GREENVILLE, PENNSYLVANIA

New Products

Rotary Stone Drill

(*Continued from page* 50)

through any masonry-like material.

Awarded 16 patent points covered by U. S. Government Patent 2425132, the Concrete Termite Rotary drill is unlike anything now on the market. The drills are available in 1/16" sizes from ½" to 1½" diameters.

Concrete Termites are used with any electric drill. Special patented features incorporated in the pulverizing tips give Concrete Termite Drills remarkable boring speed and long life. Users report three inches of concrete can be drilled in less than 50 seconds using a ½" Concrete Termite Drill.

Concrete Termites are used in the following industries: Air Conditioning, Aviation, Brewing, Building Materials, Carpenters, Cement and Concrete, Civil Engineering, Contracting and Excavating, Electrical, Explosives, Foundries, Gas, Hardware, Landscaping, Lighting, Mill Supplies, Monuments, Municipal and County, Plumbing, Public Utilities, Public Works, Quarrying, Railroads, Roofing, Safes, School Administrations, Sheet Metal Working, Stone Products, Telephone and Telegraph, etc. The product is offered by Concrete Termite Sales Co., 2301 Main St., Santa Monica, Cal.

Cellophane Packaging Products

The Package Products Co. of Charlotte, N. C., is now in full production of its recently announced additions to the packaging line, and is planning to expand its operations as soon as it can be assured of an adequate and steady suply of cellophane, which, in recent months, has been as scarce, in satisfactory quantities, as newsprint.

The operations which produce this extremely attractive packaging entail the use of four machines, two of which are unusally complex. These two are: the printing press which is equipped with four complete color heads, a refrigeration unit, and a steaming unit; and the bag-making machine capable of turning out 11,000 bags an hour of either single, duplex, flat or gusset style. A third machine makes envelope-type bags, and a fourth cuts rolls of cellophane to the desired sizes and shapes. The company also maintains an art department to assist customers in the planning of cover designs to suit their needs.

Tire Pressure Indicator

One of the first products developed by the new institute of Inventive Research at San Antonio is a tire pressure indicator of value to motorists, it automatically indicates air pressure in each tire by a panel mounted on the dash board and controlled by the ignition switch. A flashing light will warn the driver of dangerous low pressure. Industry in the South Texas area is given first chance at marketing the products developed by research at the institute, founded by Tom Slick who recently endowed the Southwest Research Institute, third and largest of the units comprising the fast growing Foundation of Applied Research. Other devices the South Texas manufacturers will be given an opportunity to produce include an improved wire line core barrel, a drill pipe float and an adjustable stabbing board for oil derricks. The latter inventions are designed for the oil industry and should find immediate markets in the Southwest oil fields.

Industrial Wheels

A new line of aluminum alloy industrial wheels of compact design and in a complete range of sizes from four to twelve inches in diameter is announced by the Airlite Division of the Aerol Co., Los Angeles, Cal., manufacturers of materials handling equipment.

Marketed under the trade name Airlite, the new wheels are available with either a molded on Grade A rubber tread or an all aluminum tread. They are corrosive resistant and their special design permits easy, free rolling even with maximum loading.

Airlite wheels may be had with either roller bearings, ball bearings, or bronze bushings, and roller or ball bearing equipped wheels have grease fittings to provide easy servicing.

Available in 4, 5, 6, 8, 10 and 12-inch sizes, with all standard axle sizes, Airlite wheels are extremely lightweight. The 10-inch wheel, for example, weighs only six and one-half pounds complete, yet has a load rating of 550 pounds.

Electric Generator

The Kober Type permanent magnet generator developed by Kober Electric Co., Arlington, Va., during the war and used successfully by the U. S. Army is now in commercial production and is available in a wide range of sizes and types.

This machine is considered one of the outstanding developments in generator construction of the past fifty years. Utilizing permanent magnets in a new way, shielded to avoid loss of magnetism, the Kober generator is capable of achieving standards of performance previously unattainable. The machine has substantially higher efficiency, lower weight, is more compact and is free of radio interference. In addition, by the elimination of exciters, slip rings, commutators, brushes, etc., maintenance cost is reduced to almost zero. Overloads and short-circuits that would permanently impair ordinary machines leave this generator unaffected.

Besides the above, the Kober generator has the following advantages:

No exposed electrical connections: resists dust and moisture better than ordinary machines.

Improved operation at high altitudes.

Faster recovery of terminal voltage after removal of overload and short-circuit.

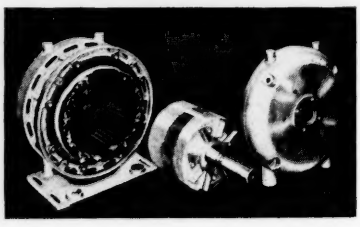
Output voltage practically independent of temperature.

Explosion proof.

The Kober generator is particularly well adapted for outboard mounting on a gasoline or diesel engine. The rotor may serve as the engine flywheel. Because of its higher efficiency, it can produce the same electric power output with a smaller driving engine. It is thus a fuel-saver.

For applications which require control of terminal voltage, an automatic integrally mounted voltage compensator is available. This unit has no switches, contacts or moving parts and is entirely automatic in operation.

The Kober generator is available in 60 cycle and 400 cycle types, single phase and three phase, in outputs ranging from 300 watts to 30 kilowatts. Larger sizes are under development.



Kober Generator Disassembled.

Canning Conveyor

The Sinclair-Scott Co., Baltimore 30, Md., recently put on the market a hydro-conveyor system for canning industry production that is said to be as nearly human in operation as it is possible for a machine to be. Features are an automatic valve device that keeps the system always supplied with the proper amount of water; a variable control device that automatically adjusts water flow from level to 100 feet in height, as desired, and any horizontal distance; a water cleaning reel that keeps the water in the system clean—giving savings by re-using water over and over. The system eliminates need for elevators and belt conveyors. Literature illustrating and describing the entire unit in detail is available from the company.

Plate Welder

A new and unusual type of welder for the manufacture of composite or clad plates used in pressure vessels has been designed by the Babcock & Wilcox Co., New York City. For seam welding applications, the operation of the new welder is characterized by consistent welding voltage, considerable power savings, and high current flow into the work. It helps overcome the problem of shunt currents and contact resistance.

In the new mechanism two rotary type transformers are used.

Belt Cutter

A new type of belt cutter has been developed by the Flexible Steel Lacing Co., 4607 Lexington St., Chicago 44, that makes it a simple job to cut belts up to 60" wide and 1⅛" thick. The new cutter will be called the No. 300 "Alligator" Wide Belt Cutter.

The No. 300 Cutter is made up of two elements—the head that carries the blade and a T-shaped base or guide rail.

To use the cutter all that is necessary to do is to square the base up with the center line of the belt. The base is then nailed to the belt and the cutter is pushed across the belt. Each cut is made about ⅛" deep and the screw is then turned to lower the blade another ⅛". With several rapid cuts a belt can be cleanly and squarely cut.

Enclosed Truck Body

The Alamo Body Works, San Antonio, has completed experiments on a new-type enclosed body for beverage trucks which the firm's president, J. R. Fendley, hopes will revolutionize the industry. The new truck body utilizes the overhead type garage door, making it possible to completely enclose the truck body, thus affording protection against weather and theft. Two doors slide over either side of the truck and into the roof of the body. The doors are of sufficient size to provide ample room for advertizing space.

Plunger Clamp

Detroit Stamping Co., Detroit, Mich. manufacturers of quick-acting toggle clamps, are in production on a new extra heavy duty plunger clamp, model 640, called "The Ram". Capable of exerting over 2500 pounds normal pressure in tests, the Ram's outstanding feature is that the handle is down when the clamp is closed, desirable on machines or fixtures where space is restricted. Further, the operating motion is downward and away from the work; the heavily loaded handle provides split-second closing as merely tipping the lever will close the clamp with considerable pressure.

This new addition to the De-Sta-Co plunger clamp line, is adaptable to such conversions as light arbor, punch and forming presses, for alignment of wood or metal parts in large fixtures, in batteries for laminating of beams or other heavy wood work, or for heavy duty clamping of parts for milling, drilling, cementing, welding or other production operations requiring fast, uniform and powerful action.

The ram is 15-¾" overall, 3-¼" high, when closed. Plunger travel is 1-¼" and pressure may be adjusted by turning ⅝" bolt in the tapped end. The base is a rugged casting with bronze plunger bushing; toggle link is hardened steel and pins are drill rod.

Pipe Couplings

The Hinderliter Tool Co., Division of the H. K. Porter Company, Inc., Tulsa, Okla. announces its acquisition of all manufacturing rights for "Nail-It" pipe couplings, "Nail-It" mud guns, "Nail-It" swivel joints and pump suction couplings.

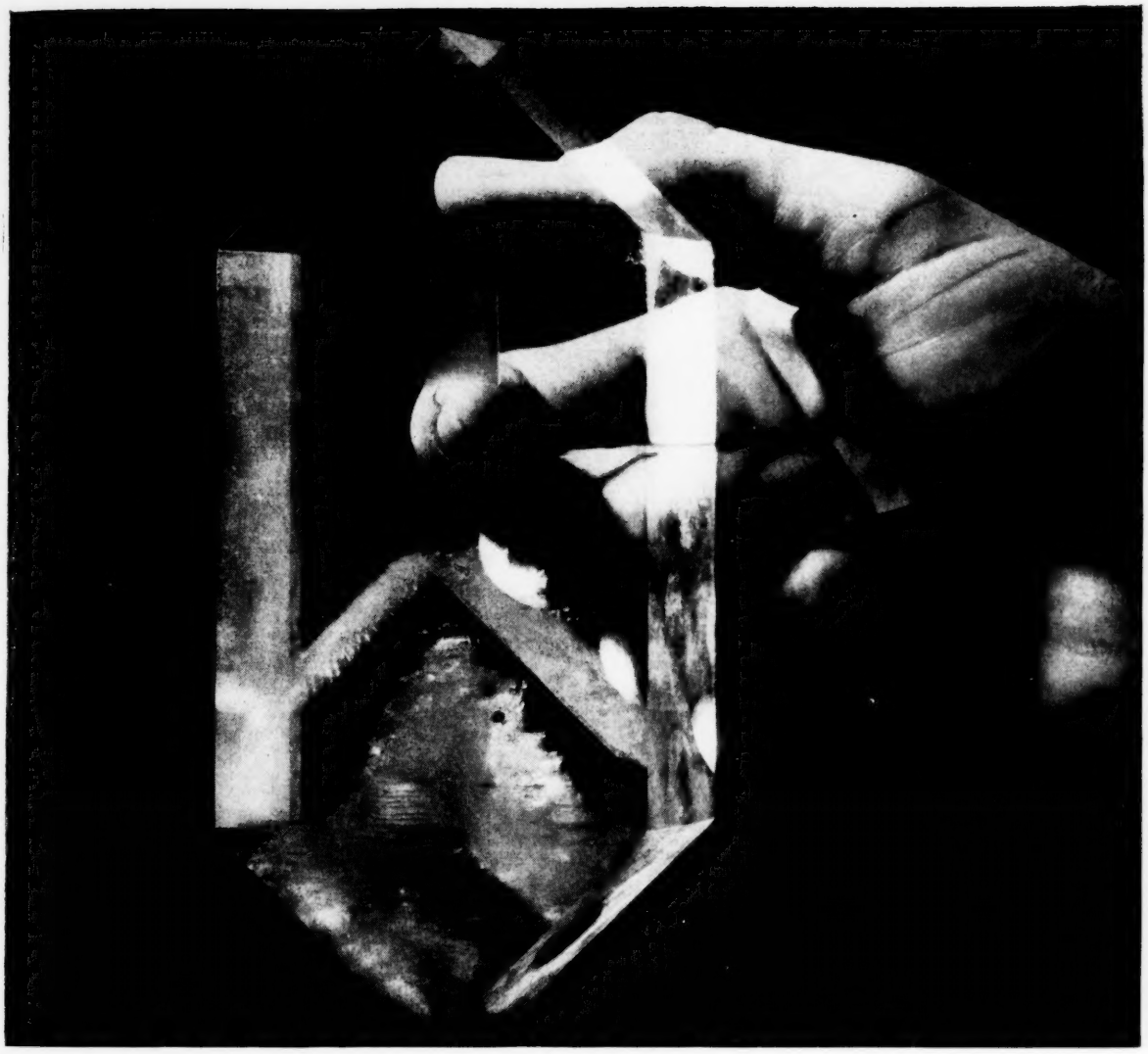
Mr George Hays, general manager of the company, further announces that manufacture of these products will begin immediately at the Hinderliter's Tulsa works under the new trade name of "Nail-It-Kwik."

This new coupling principle and sealing method is very unique and is said to be the fastest type of coupling yet devised. The halves of the unit are coupled by driving common nails into mating grooves in the male and female ends and are uncoupled by merely pulling the nails. Two or more nails are used on each coupling to form a removable steel shear ring of greater strength than a regular line pipe joint.

Fire Resistant Paint

A patented fire-resistant paint called "Fire Stop," manufactured by Plicote, Inc., Pittsburgh, is claimed to be a further improvement on fire-resistant paints originally developed for the Navy. Fire Stop is available for homes, hotels, hospitals and public buildings where small, undetected fires grow into big ones.

Laboratory tests prove that direct exposure to the blue flame of a Bunsen Burner at 3,000 degrees Fahrenheit for one full minute set fire to an ordinary painted wall and flames continued to spread rapidly after the burner was removed. A wall covered with Fire Stop merely formed brown blisters when exposed to the same heat and flames extinguished themselves within 8 to 15 seconds after burner was removed.



CRYSTALS THAT GROW FROM A SEED . . . The large crystal is an EDT (*Ethylene Diamine Tartrate*) Crystal. It is started from seed (a piece of the mother crystal) and revolved continuously in a solution. In three months it grows to the size shown. . . . Thousands and thousands of small plates, cut from the large crystals—then gold-plated and mounted in glass bulbs—are used in filters in Long Distance circuits. . . . By sorting out each telephone conversation from the others, they enable 480 conversations to go over one coaxial circuit at one time.

Crystals for Conversations

Many more Long Distance telephone coaxial circuits, in urgent demand, can be built next year because of Bell Laboratories research and development on synthetic crystals.

Plates of quartz are ordinarily used in the electric wave filters of these circuits.

But the demand has increased—the price has gone up—there will not be enough natural quartz available to build all the filters needed next year. The shortage is serious.

A long time ago, Bell Telephone Laboratories foresaw a shortage in quartz; hoped to find something even better. They devoted years of study to the physics and chemistry of synthetic crystals. They now have one that can replace quartz in telephone filters. Western Electric is now growing these crystals in the factory.

Here again Bell Telephone Laboratories' idea of making things better at lower cost helps to give you the best and most economical telephone service in the world.

BELL TELEPHONE SYSTEM

Trade Literature

The R. C. Mahon Co., Detroit 11, Mich., has published a catalog descriptive of its steel deck for roofs, sidewalls, partitions, ceilings and floors. Fifteen pages of text and pictures illustrate and describe the product in its various uses. A companion piece of literature describes the company's rolling steel doors, representing them as hand and mechanically operated, and made in models to fit various types of door requirements.

A new 12-page booklet tells machine tool users how designers and engineers are employing Fiberglas electrical insulation materials in machine tool motors to reduce bulk and weight and provide improved performance. The booklet serves as a guide to what to look for in machine tool motors. A list is included of machine tool builders who provide Fiberglas-insulated motors as standard or optional equipment on various types of machine tools. Copies may be obtained without cost from Owens-Corning Fiberglas Corp., Toledo 1, Ohio.

A new 28-page catalog, DH-1124-C, "ACCO Registered Sling Chains," has been released by the American Chain Division of American Chain & Cable Co., Inc., York, Pa. Advantages, limitations; description and specifications of steel, iron and alloy slings are set down in simple, everyday language. All attachments and their possible uses are charted for easy reference and understanding. Complete tensile strengths, Rockwell hardness, specifications and safe loads are given for Endweldur steel, Ajax and HB iron, and monel, everdur and stainless steel sling chains. Each page has a finger-tip heading for quick reference. The inside cover lists a simplified index. Manufacturers' definitions, care, inspection, specifications, safe working loads are a few of the pages in this new catalog.

Mail a card to American Chain Division, American Chain & Cable Co., Inc., York, Pa. for your copy.

Stressing its special suitability for handling highly volatile petroleum gases in liquefied form from bulk storage to tank car and from tank car to home storage tanks Hewitt Rubber Division, Hewitt-Robins, Inc., 240 Kensington Avenue, Buffalo 5, N. Y., has released a new descriptive folder on Monarch propane-butane hose

Constructed of multiple plies of high-tensile, closely woven cotton duck securely bonded by layers of oil-resisting rubber, Monarch hose is designed to withstand the extremely high pressures encountered in propane-butane service. Monarch's specially compounded nonporous synthetic rubber tube provides high resistance to the permeating action of these gases.

A new specification portfolio featuring illustrations, engineer's drawings, complete specifications and operating data on all models of Towmotor fork lift trucks and industrial tractors has been published by Towmotor Corp., 1226 East 152nd Street, Cleveland 10, Ohio.

The inside covers of the folder are used to illustrate a variety of interesting materials handling operations. A pocket on one side provides a neat file for a smaller, 4-page folder containing condensed specifications on the various Towmotor models in addition to individual specification sheets containing more detailed information on each model.

A new condensed lift truck catalog No. 1074 pictures, describes, and lists specifications on the complete line of Hyster lift trucks, straddle trucks, and mobile cranes, designed for operation on pneumatic tires. These tires allow faster operation over rougher and steeper surfaces and make easier riding both for the load and for the operator.

All of the Hyster trucks are powered by gas engines and vary in capacity from 2,000 lb. lift to 30,000 lb. lift.

In addition to the information contained in this catalog, individual catalogs on each unit are available from the Hyster Co., Portland 8, Ore.

Tennessee Eastman Corp announces publication of a completely revised edition of the book, "Tenite", concerning the company's cellulose ester thermoplastics of the same name. The present edition (the fifth) runs to 32 pages and contains 100 illustrations of Tenite products, many of them in color.

The book is written as an introduction to Tenite, and is designed to appeal to those who are interested in learning about the usefulness of this material. It deals with what Tenite is, how it is made, and for what kinds of applications it is suited. Physical properties—toughness, light weight, natural luster, color, dimensional stability, etc.—are enumerated. The last page of the book is devoted to a tabular summary of Tenite properties.

Copies may be obtained by writing Tennessee Eastman Corp., Kingsport, Tenn.

Blackhawk's postwar wrench catalog has been released, indicating an enlarged number of items. The 36-page book pictures 16 new assortments and contains 134 more wrenches than have been listed since 1943.

Many of the added numbers are new to the industry. However, a portion are re-instatements of pre-war wrenches.

The re-instatements principally include the complete series of "Nugget" socket wrenches, which have a 7/16" drive. This re-instatement is possible because "Hexite" alloy steel, restricted from use by the war, is again available. According to Blackhawk, the use of "Hexite" alloy permits the 7/16" drive to have the strength of conventional ½" drive series but the practical compactness of the ⅜" drive.

The catalog, No. 247, can be had by writing Blackhawk Mfg. Co., Milwaukee 1, Wis.

A new four page bulletin on steam traps, steam separators and other steam specialties which are immediately available has just been announced by Wright-Austin Co., 315 West Woodbridge St., Detroit 26, Mich., manufacturers of steam specialties including traps, separators, exhaust heads and boiler trimmings.

Described in detail are three types of Cub "Airxpel" steam traps suitable for pressures from 0 to 250 psi, discharging at varying rates from 300 to more than 6000 lbs. of water per hour on intermittent service or double these rates on continuous discharge.

Also included are two types of strainers, one which may be used for horizontal, vertical or right angle applications. Other items described are Kleervu safety gauge class protectors, air relief valve, and the Brownie low water signal.

"An engineered trolley for overhead conveyors, simple and rugged design," is the sub-title of a new 8-page illustrated Folder No. 2241 released by Link-Belt Co., 2410 West 18th St., Chicago 8, Ill., on the Link-Belt ball-bearing overhead conveyor trolley, which is used on the company's own conveyors but can also be purchased separately, if desired.

The folder gives dimensions, weights, trolley ratings, allowable chain pulls, list prices and other data for selection of the proper trolley for the service. Two-wheel trolleys are tabulated for use with No. 477 and three sizes of rivetless conveyor chain. Four-wheel trolleys with load bar for rivetless chain, are also listed.

An engineering data book providing all the fundamentals of pipe and fin coil calculation has been published by the Rempe Co., 340 N. Sacramento Blvd., Chicago 12, Ill.

It treats heat transfer "K" factors for all ranges of heating and cooling from minus 60 to plus 350 degrees F; gives recommended air velocities and fin spacing for fin coils; shows in detail how to calculate and design pipe and fin coils for all generally encountered heating and cooling loads.

The Rempe Engineering Data Book sells for $1.50.

A new 16 page publication has been released by Cochrane Corp., 17th St. and Allegheny Ave., Philadelphia, Pa., describing five different flash-tank and heat-exchanger systems for recovering the otherwise wasted heat in boiler blowing water. The flash principle permits regeneration of low pressure steam for feedwater or plant heating. Two thermostatically controlled systems are described for automatically proportioning the rate of blowoff to makeup water. Four pages list users from 38 states interspersed with typical dollar savings case histories due to the recovery of heat and low-pressure steam.

To assist business and industry in reducing the increasing number of fires that last year destroyed more than a quarter of a billion dollars worth of factories, plants and stores, killing hundreds of workers, the National Board of Fire Underwriters has published a 16-page booklet, "Stop Fire—Save Jobs."

Designed to help management and labor cooperate in a sound program of fire prevention, the booklet points out that industrial fires also cause losses in unemployment, lost production and business failures two or three times greater than the dollar property loss. The booklet tells how to detect and remove hazards that are common to most industries and shows how to eliminate special hazards found in many businesses.

Copies of the booklet may be obtained free from the National Board of Fire Underwriters, 85 John Street, New York 7, N. Y.

The Baldwin Locomotive Works, one of the world's largest manufacturers of hydraulic equipment and with more than 100 years' experience in building special machinery, has issued a new bulletin describing the line of Southwark steam platen presses engineered and built by the company

A 20-page illustrated booklet that describes wrought iron, has been made available for distribution by A. M. Byers Company, Pittsburgh, Pa. The title is "The ABC's of Wrought Iron."

The booklet tells in non-technical terms what wrought iron is, why it resists corrosion and withstands shock and vibration, how it is made, and how it is bent, welded and threaded. The various services for which wrought iron pipe and plates are used in the industrial, railroad, sewage and waterworks, construction, refrigeration, marine and plumbing and heating fields also are depicted.

Literature on the newly announced lightweight aluminum Rapid-Wheel gravity conveyor is now available.

A single page, three-color bulletin, showing prices and specifications of the new aluminum conveyor has been issued. Photographs illustrate how the extreme portability of the aluminum conveyor is an advantage to gravity conveyor installations that must constantly be moved. A large close-up photograph of a section of the new conveyor shows details of the conveyor frame, and complete construction facts are presented in the copy.

Copies may be had by writing to The Rapids-Standard Co., Inc., Dept. AB-147, 342 Peoples National Bank Bldg., Grand Rapids 2, Mich.

The new Emerson-Electric combination radiant and fan-type heater is pictured and described in detail in a colorful four-page bulletin offered by The Emerson-Electric Mfg. Co., St. Louis, Mo.

Included in this bulletin are complete specifications and construction features and suggestions for uses of this new heater.

A copy of the bulletin (X5838) will be mailed to those requesting it on their company stationery.

Hewitt Rubber Division, Hewitt-Robins Inc., has announced a new descriptive folder on Maltese Cross conveyor belting, now in

(*Continued on page 56*)

■ Inventions for Sale

MANUFACTURERS—Write for our FREE Classification Sheet of Inventions for Sale, covering 135 main subjects, and in one or more of which you will doubtless be interested. ADAM FISHER CO., 578 Enright St. Louis, Mo.

■ Patent Attorneys

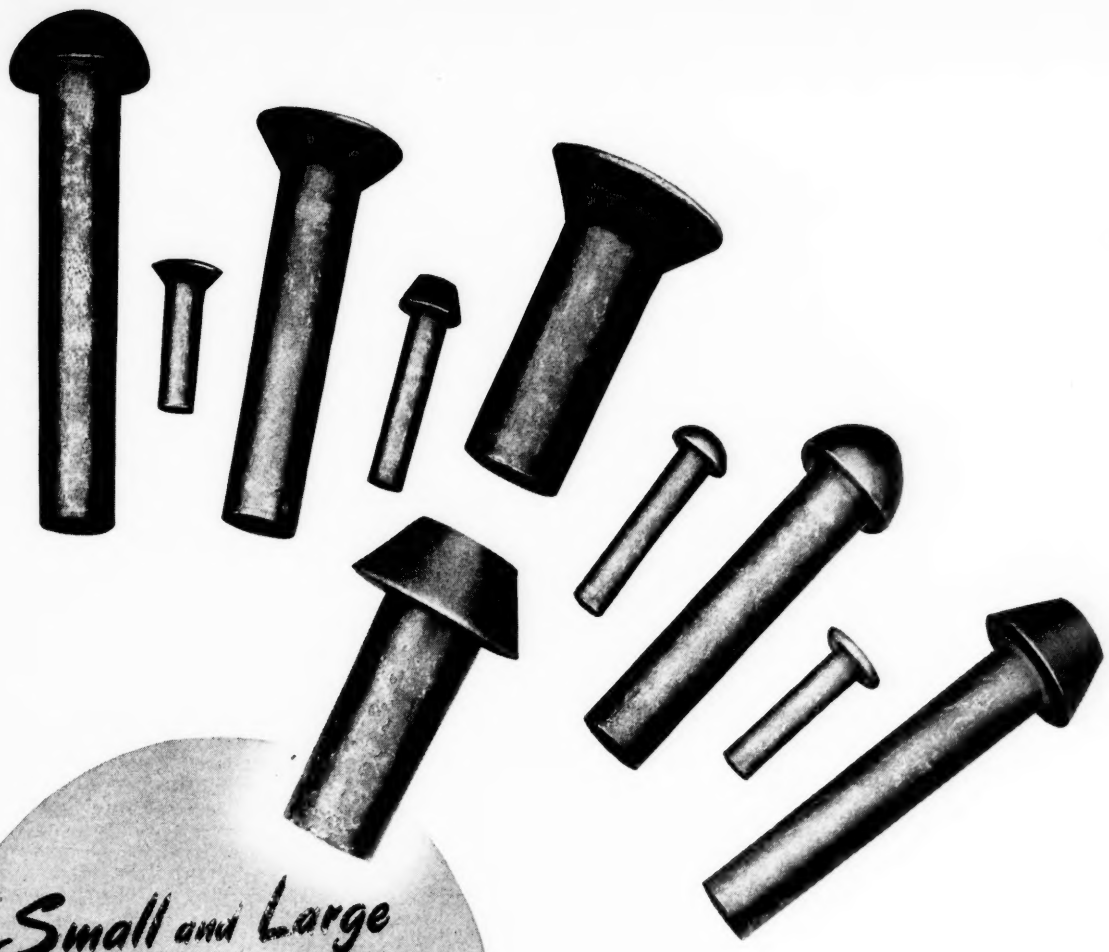
PAUL B. EATON
PATENT ATTORNEY
1208-R Johnston Bldg., Charlotte, N. C.
753 Munsey Building, Washington, D. C.

■ Business Opportunities

For Development: High grade limestone Directly on main line Chesapeake and Ohio R. R. Forty feet oolitic stone. Also deposit limestone adjoining both main lines of Norfolk & Western and Virginian R. R. Principals address: Owner, Box 531, Beckley West Virginia.

■ Men Wanted

Engineer, age 25 to 35; at least 5 years experience in contractors office building construction. Experienced in taking off quantities, handling office details. Location of work, Louisville, Kentucky. State education, experience, salary requirements. Address #9709, c/o Manufacturers Record, Baltimore 3, Maryland.



Small and Large RIVETS

Bethlehem furnishes small rivets in sizes 7/16 in. and smaller, lengths 6 in. and shorter, and with button, cone, countersunk, pan and flat heads.

Large rivets are made in sizes from ½ in. to 1¾ in., and in lengths from 2 in., in steps of ⅛ in. They are supplied with button, high-button, countersunk, round-top countersunk, cone and pan heads, also swell neck.

BETHLEHEM STEEL

BETHLEHEM STEEL COMPANY, BETHLEHEM, PA.

On the Pacific Coast Bethlehem products are sold by Bethlehem Pacific Coast Steel Corporation

Export Distributor: Bethlehem Steel Export Corporation

Other Bethlehem Construction Fastenings

SPIKES . . WASHERS . . BOLTS and NUTS . . TIE-RODS . . TURNBUCKLES . . CLEVISES

Trade Literature

(*Continued from page* 54)

production after being withheld from manufacure during the war because of government restrictions on the use of premium quality materials.

The new folder stresses the "job-engineered" features which give it extra strength, greater flexibility and longer service life.

Maltese Cross belting is offered in straight-ply, stepped-ply and shock-pad construction in all widths and plies. Special construction is also available for handling hot materials.

Copies of the folder are available by writing 240 Kensington Avenue, Buffalo 5, N. Y.

Titan bronze welding rods are described in a new 6-page folder just issued by Titan Metal Manufacturing Co., Bellefonte, Pa. The approximate chemical and physical properties of seven types of welding alloys are included in table form.

The Resinous Products & Chemical Co., W. Washington Sq., Philadelphia, Pa., has prepared an informative booklet on the subject of synthetic resins in modern paper-making procedure.

Illustrated with story-telling photographs taken at the Savannah, Ga., plant of the Union Bag & Paper Corp., the new booklet discusses the history of wet strength in paper and its value in such applications as waterproof maps, paper towels, bags for chopped ice, moist fruit or vegetables, frozen foods and bottled beverages.

Specific data on preparation, operating conditions, dilution of resin and broke recovery with Uformite 467, 470 and 500 are treated in detail to give a comprehensive picture of this important development that has so greatly expanded the market for paper products.

"Toward Our Third Century" is the title of a brochure published by Washington and Lee University, Lexington, Va. Opening with inspiring memoirs of its two revered sponsors, Generals George Washington and Robert E. Lee, the text passes to an expression of responsibility which the names place upon the institution. "As long as conscience translates history into action, Washington and Lee University confesses inescapable committals," it states. Continuing, it is explained, that, like other worthy schools, the institution centers its energies upon the direct procedures of instruction and particularly upon the integrity of instruction. A liberal presentation of photographs pictures familiar scenes and activities that take place on campus and within the structures.

The 1947 Directory of Manufacturers in the St. Louis Area, prepared and recently issued by The Industrial Bureau of the St. Louis Chamber of Commerce, 511 Locust St., St. Louis 1, contains 4,000 classified listings of products manufactured by 2,775 firms in the St. Louis industrial area. Classification is according to the official scheme of the U. S. Bureau of the Budget's standard classification manual. This system groups commodities into 21 major groups. Each of these divisions in turn is divided into various sub-divisions. Of the 468 classifications found in the most recent Federal census, 357 are represented in this directory. Copies are available from George C. Smith, president of the St. Louis Chamber.

In its report covering the 38th year of operation, ended June 30, 1947, International Minerals & Chemical Corp., announces net profit for the year of $34,373,106, an increase of 36 per cent compared with the previous year. Net sales amounted to $41,302,250, showing an increase of 20 per cent over the previous year. Sales and earnings exceeded all previous records, reflecting diversification and expansion upon which the corporation embarked some years ago.

A new catalog section on its line of hand carbon dioxide fire extinguishers, for use both in industry and the home, has been published by The B. F. Goodrich Company, Akron, Ohio. Copies are available upon request.

Made in four sizes, with the carbon dioxide charges 2¾, 4, 10 and 15 pounds, the catalog section describes construction of the extinguishers and gives specifications, including total weight and type of nozzle connection.

Annealing in surface combustion standard rated furnaces is described in a new 4 page Bulletin No. SC-135 issued by Surface Combustion Corporation, Toledo 1, Ohio.

The bulletin, appropriately illustrated, defines the various annealing and related processes for both ferrous and non-ferrous metals. A critical temperature range chart showing in color normalizing full annealing, spheroidizing and process annealing ranges and photo micrographs of annealed low, medium and high carbon steels are included.

The bulletin describes and shows illustrations of both direct fired and prepared atmosphere furnaces, discussing the advantages of each type.

The bulletin also contains a chart showing the amount of gas saved by correct proportioning of the air-gas ratios for combustion.

The National Supply Co., and the Martin-Decker Corp. have collaborated to produce an entirely new weight-measuring method for use in oil well drilling. Essentially, the method is the use of National's Ideal Type D wire line anchor to actuate a hydraulic pressure transformer, which in turn transmits pressure to operate the weight indicator. The load on the dead line is shown directly in pounds by the weight indicator gauge. Accuracy of the weight indicator is not impaired by temperature changes of small amounts of air in the system. A new bulletin on this weighing system has been issued and may be obtained by writing, Box 899A, Toledo 1, Ohio.

Answering hundreds of practical questions on fuel saving practices and fuel conservation measures, the Bureau of Mines has combined in a single publication all of the material used successfully in the wartime National Fuel Efficiency Program that resulted in the saving of millions of tons of coal annually and in proportionate saving in other fuels, James Boyd, Director of the Bureau, announces today.

Copies of Bulletin 466, "A Guide for Reducing Fuel Consumption in Commercial Plants," may be obtained only from the Superintendent of Documents, U. S. Government Printing Office, Washington 25, D. C., for 50 cents. This Bulletin is NOT sold by the Bureau of Mines.

Radically changing its listing techniques, Allegheny Ludlum Steel Corp., 2020 Oliver Building, Pittsburgh 22, Pa., has issued a new list of tool and high speed steel warehouse stocks which not only indicates types, shapes and sizes available, but also shows the exact location of each item in stock. Now, the buyer can determine the nearest source of supply as he makes the selection for his needs.

The new catalogue contains 62 pages of indices of all high speed and tool steels marketed by Allegheny Ludlum through its warehouse system. Each page is laid out in graff form with the company's eighteen warehouses represented vertically and sizes listed horizontally. Symbols, used to designate flats, squares and rounds, are placed to indicate whether a given warehouse stocks the particular shape and size needed.

The National Supply Co., Box 899A, Toledo 1, Ohio, has issued a new 16-page bulletin on its Ideal power slush pump Type C-350. The bulletin gives complete product details, cutaway and "explosion" illustrations, performance chart, complete specifications and describes the pump's general and special features. One of many outstanding features of the pump is its patented baffling system that positively prevents mud contamination of crankcase oil.

Precision Equipment Co. has published an 8-page catalog of office equipment and furniture featuring such hard-to-get items as steel shelving and steel storage cabinets. Write to Precision Equipment Co., at Long & Schubert Aves., Chicago 39, Ill., for your copy.

The Island Equipment Corp., of 101 Park Ave., New York City 17, N. Y. has issued a bulletin, known as their P-C18-1A-1, Ultimate Double-Flex chain conveyor for the economical and prompt handling of cases, cartons, boxes and cans.

It is printed in two colors, 8½ x 11, with 16 pages.

It is filled with diagrams, floor plans, layouts, installation views, and detailed construction of the system.

A copy will be sent to any interested party writing in on their company's stationery.

A new four-page folder covering the usage and specification of "Wolmanized" preservative-treated lumber and "Minalith" fire-retardant lumber has been issued by the American Lumber and Treating Co. Copies can be secured by addressing the company's advertising department, 332 S. Michigan Ave., Chicago 4, Ill.

The folder describes properties and characteristics of forest products alloyed with "Wolman" wood-preservative salts and "Minalith" fire-retardant salts, and outlines the pressure-treating process used at the company's nine plants for applying these two treatments and creosote. Proper construction usage of treated wood and standard specifications for treatment are reported in the folder.

Letters

EDITOR, MANUFACTURERS RECORD:

In the October issue of the MANUFACTURERS RECORD on page 39 in a story of the hurricane the statement is made that the only railroad equipment destroyed was the L&N bridge over Bay St. Louis Miss., and the railroad was planning immediate rebuilding. Further, that trains were rerouted and schedules were normal within 48 hours.

I fervently wish that the statement were true. As a matter of fact, 40 miles of our railroad was practically destroyed and three bridges wrecked, the one mile bridge over Biloxi Bay, the two mile bridge over Bay St. Louis and the bridge over Pearl River. We have had large forces of men working constantly since the abatement of the hurricane but notwithstanding the strenuous effort we are making, it probably will be the middle of November before the line is open. The cost will probably exceed $3,000,000 not including the loss of passenger and freight traffic due to closing the line from Biloxi south to New Orleans.

Yours very truly,
J. E. TILFORD,
Executive Vice President,
Louisville & Nashville Railroad Company
Louisville 1, Ky.

EDITOR, MANUFACTURERS RECORD:

Mr. Norman Foy and several other of our executives received your letter of September 5 requesting comment on the steel articles which appeared in the September issue. I have been asked to collect the facts and reply.

MANUFACTURERS RECORD draws some interesting conclusions in its Septemer issue concerning the need for expansion of steel production in the South. In some respects they are open to question. The abnormal demand for steel and pig iron is not peculiar to the South but is nationwide. The seeming reluctance of the steel industry to launch a tremendous expansion program is based on cold economic facts. In the 22-year period from 1920 through 1941, the steel industry averaged 62.7% of capacity operations. While this period contained some very good times and some very bad ones, there were only 7 of the 22 years in which the industry operated at 75% of capacity or better; in 6 other years it operated at 40% of capacity or less. It is hardly conceivable that the per capita need for steel has increased in the 6 years since 1941 to a point which makes even war-expanded steel capacity permanently inadequate.

There is the further consideration of

current construction costs. The present steel industry represents an investment of $50.20 per ton of ingot capacity. New capacity built today costs well over $200.00 per ton, which means that steel produced in such new plants would have to be sold at $20.00 per ton above the current market to show any return whatever on the huge investment required.

The operating record of the steel industry will indicate that its capacity has rarely been fully engaged in peacetime. It is currently spending hundreds of millions to increase output, but this must be done within the bounds of sound economics. The current difficulties in steel supply result from the attempt to make up a huge war created deficit in durable goods of all kinds while trying to satisfy a peak current demand based on the highest national income in history.

The fact should also be faced that the advantages once inherent in southern manufacture have been wiped out by the drastic increases in labor and other costs in recent years. As compared to 1939 Republic's cost of producing ingots has risen 80% in the North. The increase in our Southern plants has been 115% in the same period.

The tremendous rise in Southern coal costs is bound to have a long-range effect on pig iron production. Our costs on blast furnace coke have risen 353% and the cost of coke alone is now more than the cost of finished pig iron eight years ago. These are a few of the serious considerations confronting the steelmaker when expansion plans are discussed.

To help meet the great need for additional pipe lines, Republic has underway the construction of a new mill to produce electric welded steel pipe in diameters from 20 to 30 inches and in lengths of 30 feet at its Gadsden, Alabama plant. The pipe will be made from flat steel plates rolled on the existing plate mill, which will be cold formed into tubular shapes and electrically welded. Present schedules call for initial operation of the mill in June 1948.

Republic, and the steel industry generally, have always managed to meet, and usually to anticipate, all normal requirements for steel in the South and elsewhere. Since the war's end Republic has made commitments of $108,500,000 for expansion and improvement of facilities.

Very truly yours,
L. S. HAMAKER,
Asst. General Manager of Sales,
Republic Steel Corporation.

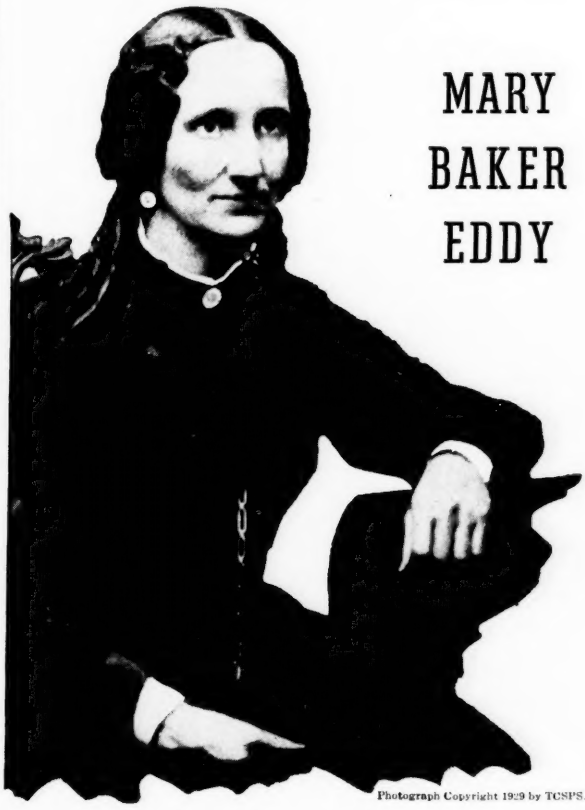
Blaw-Knox Sales Up

Total sales and billings for Blaw-Knox Co. and subsidiaries for the first nine months of 1947 were $39,303,760, compared with $35,997,797 for the corresponding period of 1946. Net profit after taxes for the nine months period was $2,224,521 or $1.65 per share, and this 1947 profit compares with $1,742,805 or $1.30 a share in the corresponding 1946 period.

Net profit for the third quarter of 1947 after taxes was $842,238 or 62 cents a share, and compares with $688,741 or 51 cents per share in the third quarter of 1946.

William P. Witherow, president, stated that operations thus far in 1947 have been impeded to some extent by material shortages. He reported that incoming orders in the September quarter were above the year's average and that the backlog on September 30 was $27.8 million.

—New Hampshire Personalities—



MARY BAKER EDDY

Photograph Copyright 1929 by TCSPS. Used by permission.

Mary Baker Eddy was born in 1821 at Bow, New Hampshire, of a family prominent in clerical circles. She showed at an early age an unusual curiosity for and a notable ability to discuss religious subjects. The beginning of her interest in spiritual healing can be traced to her 12th year when she was cured of a fever through prayer. In 1866, she fell and was injured severely. After a few days of medical treatment without showing improvement, she turned to her Bible and experienced an immediate recovery. From that time, Mrs. Eddy devoted her life to teaching and demonstrating her religion by healings. In 1876, she and a few followers founded the Christian Science Association and 3 years later organized the Church of Christ, Scientist.

NEW HAMPSHIRE
FIRE INSURANCE COMPANY
Manchester, New Hampshire

GRANITE STATE
FIRE INSURANCE CO.
Portsmouth, New Hampshire

The South's Trade Balance

(*Continued from page* 44)

Minerals	1,134,241
Forestry	423,820
Minus Shipments	
Livestock	191,501
Manufactures	1,807,245
Plus Balance	1,121,711

Georgia

Plus Shipments	
Forestry	2,536,923
Minus Shipments	
Farm Crops	1,102,539
Livestock	208,609
Minerals	2,298,404
Manufactures	1,995,420
Minus Balance	3,068,049

Kentucky

Plus Shipments	
Livestock	82,042
Minerals	45,174,687
Minus Shipments	
Farm Crops	849,256
Forestry	57,938
Manufactures	1,176,873
Plus Balance	43,172,662

Louisiana

Plus Shipments	
Manufactures	2,157,890
Minus Shipments	
Farm Crops	1,329,333
Livestock	137,034
Minerals	1,933,528
Forestry	1,172,489
Minus Balance	2,414,494

Maryland

Plus Shipments	
Manufactures	1,569,927
Minus Shipments	
Farm Crops	2,804,626
Livestock	287,175
Minerals	14,258,768
Forestry	297,289
Minus Balance	17,647,858

Mississippi

Plus Shipments	
Minerals	1,702,478
Forestry	4,935,248
Minus Shipments	
Farm Crops	51,826
Livestock	12,445
Manufactures	1,827,854
Plus Balance	4,809,872

Missouri

Plus Shipments	
Livestock	468,851
Minus Shipments	
Farm Crops	1,279,680
Minerals	2,378,380
Forestry	328,431
Manufactures	251,194
Minus Balance	3,768,834

North Carolina

Plus Shipments	nil
Minus Shipments	
Farm Crops	935,747
Livestock	143,162
Minerals	4,780,107
Forestry	285,970
Manufactures	2,616,393
Minus Balance	8,761,379

Oklahoma

Plus Shipments	
Farm Crops	1,267,175
Livestock	216,886
Minerals	1,201,037
Manufactures	2,356,674
Minus Shipments	
Forestry	314,848
Plus Balance	4,726,924

South Carolina

Plus Shipments	
Forestry	824,008
Minus Shipments	
Farm Crops	28,577
Livestock	79,859
Minerals	2,897,069
Manufactures	299,555
Minus Balance	2,484,062

Tennessee

Plus Shipments	
Manufactures	498,598
Minus Shipments	
Farm Crops	786,426
Livestock	13,244
Minerals	4,312,134
Forestry	753,535
Minus Balance	5,366,741

Texas

Plus Shipments	
Livestock	591,255
Minerals	1,335,372
Forestry	200,947
Manufactures	668,307
Minus Shipments	
Farm Crops	2,276,588
Plus Balance	519,293

Virginia

Plus Shipments	
Forestry	553,649
Manufactures	126,786
Minus Shipments	
Farm Crops	1,711,689
Livestock	269,271
Minerals	13,005,903
Minus Balance	14,306,428

West Virginia

Plus Shipments	
Minerals	112,630,918
Forestry	62,242
Manufactures	1,694,148
Minus Shipments	
Farm Crops	547,528
Livestock	55,731
Plus Balance	113,784,049

A study of the foregoing breakdown immediately suggests several interesting questions. Why should a highly industrialized state like Missouri or North Carolina show a deficit in exports of manufactured articles? Why should great mineral states like Louisiana or Virginia show a greater inflow of mineral products?

Answer to all of these and many questions can not be answered within the scope of this one study. Three reminders, however, are in order. (1) The figures reviewed pertain only to rail freight. If truckage tonnages were available, some changes might appear in the results, although rail traffic constitutes by far the major portion of both incoming and outgoing freight. In most instances truck tonnages would merely serve to accentuate the balances already discovered. Outgo of Florida agricultural products, for instance, undoubtedly would appear in greater volume if truck tonnages could be added to those shipped by rail.

(*Continued on page* 61)

Materials Handling

(*Continued from page 43*)

certain limiting factors that must receive consideration, such as floor loads, floor space, aisle space, ceiling heights, widths and heights of doors, etc. All these variables create problems that must be carefully considered, and each element of the problem must be resolved upon its own merit. It follows therefore that no universal method can be devised that can be adapted to all industries.

In other words, it seems that the materials handling industry should offer a fertile field for engineers who are trained and equipped to analyze and solve the various and complex problems involved.

Recent Developments

Modern materials handling methods are comparatively recent developments and have gained considerable prominence only during the recent war. As a result of the war emergency, the Allied Nations found it necessary to deliver each month millions of tons of supplies and materiel to millions of troops fighting at the ends of supply lines extending in some cases half-way around the globe.

At the beginning of our war effort, the problem confronting the Allied Military Service and supply organizations was not only the rapid distribution on a world-wide basis of astronomical tonnage of materials, but also to overcome the problem of critical shortages in manpower, time, and shipping facilities.

Through the development and standardized use of what is known as the "fork truck-pallet" system, it was found that unit loads of material, in package form, could be handled practically and efficiently without breaking the bulk package anywhere along the main arteries of supply from factory to battlefront.

Peacetime Possibilities

The equipment and methods so successfully employed by our Allied Service Forces to do such a spectacular job of materials handling in wartime can be equally spectacular and efficient during normal peacetime operations. The important developments in equipment and procedure attained during the war will have significant post-war possibilities, because these developments have definitely pointed the way to improved handling methods and lower distribution costs.

Savings Possibilities

Mr. W. Gordon Bennett, Packaging and Paper Standard Department, Anaconda Copper Mining Company, made the following statement before the American Management Association in Philadelphia at their meeting in May, 1947: "Annual savings possible through unit loading methods of materials handling stagger the imagination."

Examples of Savings

Mr. Bennett cited a number of examples of savings made possible through unit loading. Among them were: "An order calling for 100,000 lbs. of material that ordinarily would have been shipped in 500-lb. boxes was strapped on pallets, each package a load of 4,000 lbs. This required 25 pallets at a total cost of $75. If we had packed it in the manner formerly in use, it would have required 200 wood cases at $4.25 each, or a total packing cost of $850. Savings on this one small order amounted to $775, and our customer was delighted with the results, as his handling charges were reduced also."

"In another case, a pallet was constructed to carry 4,000 lbs. of material formerly shipped in crates with a capacity of 500 lbs. The pallet cost $2.00, the eight crates $2.30 each, or $18.40; so we saved $16.40 on the order or $4.10 per 1,000 lbs."

At the Hydraulic Pressed Brick Co. yard at Sparland, Ill., the use of palletized loads and small pneumatic tire lift truck effected savings of twenty-eight dollars to forty-five dollars and sixty cents per day depending on the scheduled operations. In this industry, as you know, a great deal of handling by hand is still necessary.

Bemis Brothers Bag Co. at Peoria, Ill., reports a savings of $22.80 per each eight hour shift in the handling of unit loads of paper bags of various weights and sizes. Physical injuries to employees, especially the old bugaboo of back strains, has been reduced to but twenty per cent of its former figure.

(*Continued on page 60*)

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Our 13th Great Year—Staff of Over 200

Southern Business Outlook

(*Continued from page* 10)

is now being operated by Columbian Carbon Co. Maj. Gen. Richard Donovan, wartime commander of the Eighth Service Command at Dallas, has been made vice-president and research director for the Alford Refrigerated Warehouses. Fred F. Alford, president, said Donovan will direct activities of the research department in the firm's two new huge warehouses under construction.

The Best Foods, Inc., has purchased the Trinity Cotton Oil plant at Dallas for production of mayonnaise and later, as soon as equipment is available, margarine. The plant will house all manufacturing operations at Dallas as well as the Southwest headquarters for the firm. Other plants are at San Francisco, Chicago and Bayonne, N. J. T. A. Hughston will be general plant manager.

Tennessee News

By

GEORGE I. WHITLATCH, *Chief Economist*
Tennessee Planning Commission

Tennessee Products & Chemical Corp., originally incorporated in 1917 as Bon Air Coal & Iron Corp., has expanded to the point where it now operates units at Wrigley, Chattanooga, Rockwood, Rockdale, Whitwell, and Nashville. The present firm name was assumed last summer. The operating plants have an extensive category of by-products manufactured from coal, limestone, iron, wood. Among these products are ferrophosphorous, charcoal, charcoal pig iron, methanol and its products, acetic acid, wood oils, tar and pitch, artificial gas, benzol, cinnamic aldehyde, bensaldehyde, sodium benzoate, muriatic acid. Net sales exceeded $8½ million in 1945.

An estimated 2,200 persons inspected the Bollivar Tannery of International Shoe Co., at its formal opening recently. The new tannery, reported to be the most modern unit in the world for manufacture of chrome-tanned cattle hide shoe upper leather, contains almost 150,000 square feet of floor space, and is located on a tract of 171 acres.

Officials of Tennessee Aircraft Inc., Nashville, recently visited Union City and inspected buildings at the Tom Stewart Airport, five miles from the city. The company will employ 250 men and bring a weekly payroll of $10,000 to the community, it is estimated.

At a meeting held at Old Hickory in late September, a group of 30 representatives from 10 industries and the University of Tennessee voted to form a Tennessee Society for Quality Control.

Metal Products Co., Nashville, is a new company equipped to turn out general products in metal stamping, blanking and forming. Wesley Dyer is president of the company.

A third new industry, The Miltron Corp., has obtained plant facilities in Greenback, for the manufacture of Rug-Kling, a non-skid underlay designed to prevent slippage of rugs. The new organization will be directed by Howard A. Miller, president, and C. L. Melton, Secretary-treasurer. Rug-Kling, reported approved by Good Housekeeping, is said to be the result of 12 years' experimental work and development.

National Plastics Inc., Knoxville, has gone into production of Plastone, a plastic compound developed from cottonseed hulls through a process evolved by University of Tennessee Laboratories. Capacity of the plant is 180,000 pounds monthly, with further expansion anticipated.

The 1947 edition of Directory of Tennessee Municipal Officials has now been issued by University of Tennessee's bureau of Public Administration. Copies are available at $2.00 per copy from the Bureau, Box 4144, University of Tennessee, Knoxville, Tenn.

Oil and gas finds continue in the state's fields, with the Hillis Erwin well in White County reported as encountering a strong gas flow at the 260-foot depth, and oil ot the 600-foot level. Oil is being produced in the Pickett-Fentress field.

The Tennessee Liquefied Petroleum Gas Association is a new organization formed to promote the gas industry. Paul G. Boyd of Arlene Gas Co., Dyersburg, is president; W. H. Williams of Chattanooga, vice president; J. C. Reynolds, Nashville Butane Gas Co., secretary-treasurer.

Southern Finishers Inc., Nashville, specializing in industrial electroplating and finishing, has completed installation of additional facilities. The company furnishes service throughout Tennessee, Kentucky and Alabama.

Oliver Corp., farm and industrial equipment manufacturers, have let contract for a branch factory at Memphis. Expansion is reported to be in response to increasing markets in the South for all types of mechanization

Two buildings of American Enka Corp.'s new $25 million rayon plant near Morristown are reported to have been completed, and work started on three other structures. This largest of Tennessee's industrial developments is expected to be ready for production early in 1948.

U. S. Rubber Co.'s Milan unit which started operation last year has announced that production schedules are being increased and employment expanded. Some departments are reported to be on a two-shift schedule. Doubling of present employment is expected.

Victor Chemical Work, which recently announced plans for a multi-million dollar expansion program including its Mt. Pleasant, Tenn., unit expect that unit together with the one at Tarpon Springs, Fla. to supply most of the principal basic materials for operation.

Plants reporting plans for expansion:

Stewart Coffee Co., Memphis; Royal Crown Bottling Co., Knoxville and Johnson City; Springfield Manufacturing Co. (shirts), Springfield; Slumber Products Co. (mattresses, divans etc.), Memphis; Tennessee Brewing Co., Memphis; Nashville Corrugated Box Co., Nashville; Martin Dairy Products Co., Martin; Kraft Foods, Knoxville.

Materials Handling

(*Continued from page* 59)

Basic Findings

Certain very interesting information has recently been published showing the savings that can be obtained with modern materials handling equipment and methods. These figures are the result of careful studies made by the U. S. Navy in its Materials-Handling Laboratory. These studies showed:

A. That 68% of the man hours required to unload railway freight cars can be saved by using better handling methods.

B. That adoption of the fork-truck pallet system speeded the flow of materials through every handling operation.

C. That high stacking enables the best possible utilization to be made of available storage space.

D. That, as a result of this new system, handling time is being cut as much as 75%.

E. That every time palletized materials are handled without manually breaking bulk, the result was additional savings of time and manpower.

F. That shipments formerly requiring fifty man hours to unload can be unloaded in 1½ hours.

G. That one man with a lift truck can load a car more quickly than a gang of eight to ten manual laborers.

H. That, when loading palletized material onto lighters with lift trucks, six men can do the work previously done by 100.

I. That the use of the fork-truck pallet system for handling cargo in the holds of ships saves 50% in loading time and 75% in man hours.

Unit Load Principle

Perhaps the most important determination that must be made when introducing modern materials handling methods is the adoption of a standard unit load.

The Unit Load Principle involves a method of arranging and handling goods or materials in a standardized package. The unit may be of weight, measurement or volume. It may consist of only one crate or case, or as is more often true, it may consist of a number of cases, packages, boxes, cartons, bags, etc. grouped together or assembled and strapped to a pallet as a standard unit.

The more pieces or pounds collected

(*Continued on page* 61)

Materials Handling

(*Continued from page 60*)

together and moved as one unit in a single operation, the less time will be required to move each piece or pound. Special cases or crates may be required to handle special types of material. Large material such as rods or bars can be arranged in bundles, each strapped to cleats or dunnage, or set in cradles to enable stacking and tiering.

In some cases it may even be desirable to redesign the product so that the various pieces can be nested one on top another and handled with a fork lift truck without pallets. Whenever sufficient quantities are involved, the design of the package, case, crate or bundle may be so arranged that it will automatically palletize the goods, thus avoiding the use of pallets or dunnage.

The internal arrangement of storehouses can be greatly simplified, and the available space can be more efficiently utilized by having standardized packages, and stock checking and inventory taking becomes a much simpler operation and much more accurate by virtue of the fact that the contents of unit loads can be calculated from the geometrical pattern.

The removal of an article from a unit load can quickly be detected and the absence of a unit load from a tier or stack will be apparent at once by visual inspection.

Advantages of Unit Loading

From the above, it may be seen that the application of standard unit loads is far-reaching; it facilitates handling, reduces breakage, minimizes pilfering, resulting in:

1. Substantially lower handling cost.
2. Rapid movement of goods.
3. Maximum utilization of storage space.
4. Minimization of damage.
5. Minimization of loss through pilfering.
6. Less waste of labor.
7. Less slinging required, or sometimes slinging can be entirely eliminated.
8. Reduction in terminal time for loading and unloading rail cars, motor trucks, ships, etc.
9. Better ventilation when storing perishable goods.
10. Simplification of vermin control.
11. Simplification of fire control.
12. Simplification of stock taking and stock recording methods.
13. Greater accuracy in stock taking methods.
14. Promotion of better packing methods, usually reducing costs.
15. Greater use of the cubic contents in a store or warehouse (due to the ease in which stacking can be carried out at great heights).
16. Work becomes less arduous to employees.
17. Less fatigue with workmen.
18. Accident risks are lower.
19. Employees become more contented and capable of performing a better day's work.
20. Savings of capital cost of ships, rail cars, motor transport, truck, etc., by reducing terminal time to minimum, permitting maximum mileage. This equals, in effect, more ships, more freight cars, and more road vehicles. Actually, with reduced terminal delays, freight carrying transport may be greatly reduced.

Ed. Note—A continuation of Mr. Johannsen's discussion will be published in a subsequent issue.

South's Trade Balance

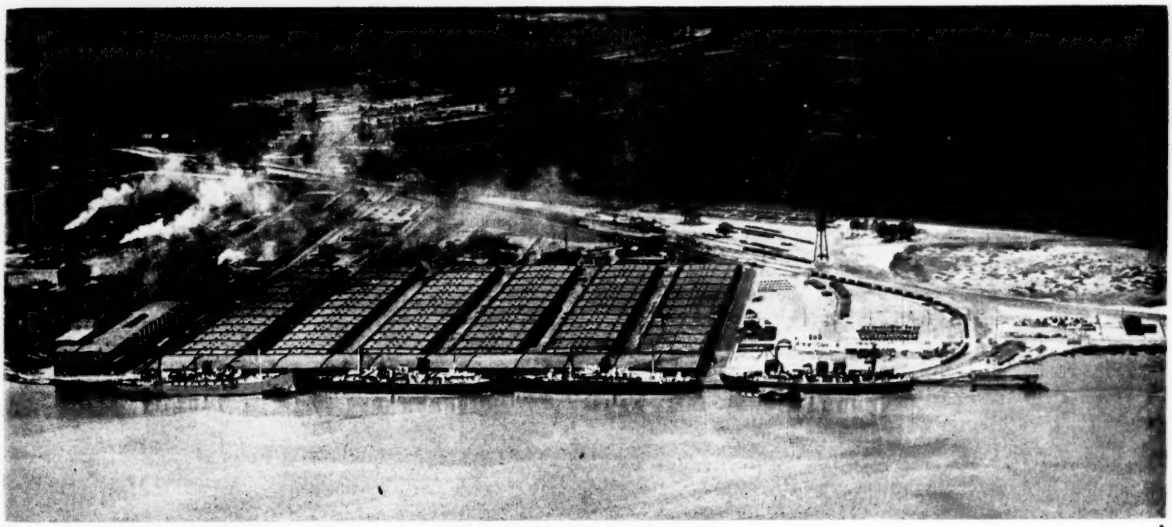
(*Continued from page 58*)

(2) Rail tonnages include shipments destined for foreign trade. Much of the freight that terminates in states having ports on the Atlantic seaboard or Gulf coast is of that nature. Since exports to foreign lands in 1946 were far greater than imports, tonnages terminating in Southern port states were much larger than tonnages originating through foreign trade.

(3) Above all it must be remembered that tonnage does not represent dollar value, and that a small tonnage of finished commodities can be productive of far greater dollar income than larger tonnages of heavy raw materials.

In any event, however, there is real im-

(*Continued on page 64*)



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Newport News Pushes Industry

(*Continued from page* 40)

which the current drive for plants to diversify Newport News' industry is founded.

Bankers, whose deposits are up compared with last year, merchants, who last year in the tri-county area experienced sales of almost $71,000,000, industrialists who already employ many of the peninsula's 144,000 people, and progressive civic leaders are all solidly behind the industry promotion move which dates back to the summer of 1945 when a group of Newport News businessmen, remembering the economic doldrums after the first world war in what was practically a one-industry city met to consider possible steps to avoid similar conditions expected to follow the recently closed conflict.

A. Byron Williams, local architect, Charles K. Hutchens, head of a Newport News auto exchange, and Mayor R. Cowles Taylor were prominently mentioned in the early stages of the idea's development. The various groups all had the same aim. Organization of the Industrial Committee of the Peninsula Association of Commerce was the final result. The next step was selection of a competent industrial engineer who could spearhead the campaign. G. A. Bentley was brought from Chicago for the purpose.

A dynamic personality, Mr. Bentley was able to announce the first new industry under the program within a few weeks after his arrival. This was the Crown Fastener Corp., a subsidiary of the Clark Thread Co. and maker of zippers by a patented process. The laundry at the old Hampton Roads Port of Embarkation, which during two wars has handled millions of men on their way to foreign battlefields, was to be used for the purpose. Initially announced employment was 1,000 workers, a figure expected to gradually rise to 5,000.

The Crown plant is now operating and its manager, R. M. Hutchinson, states that never during his wide experience has he encountered such ideal labor conditions as those prevailing in the Newport News area. The workers, he said, are of good native stock with the aptitude to readily learn the tasks assigned to them. He emphasizes the absence of the elements so troublesome in New England.

The Crown property was purchased by the Clark Company for $87,500, including the 3.96-acre site, the former laundry building 1622 feet by 27 feet with two wings of 72 by 72 feet and 72 by 55 feet, a steam plant and two storehouses. The sale was negotiated by Warwick County and the Peninsula Industrial. J. C. Biggins, city manager of Newport News for 22 years, is chairman of this committee.

A. J. Siris Co. was the second new industry. Also now operating, the plant produces powder puffs and women's accessories. The plant is located in a former negro USO building purchased from the government by the City of Newport News. Announced by Mr. Bentley, the industrial commissioner, less than three months after his arrival in Newport News, the plant has an employment roll of 200. This may ultimately reach from 1,000 to 1,200 workers.

The third plant demonstrated what can be done to utilize a roofless, brick building which lay idle and deserted in adjacent Hampton, a town that shares with nearby Phoebus a thriving seafood packing and freezing industry. Reconstruction of this building formerly used as an armory and originally a car barn in the days of horsedrawn vehicles is a tribute to the ingenuity of the architectural firm of Williams, Coile and Pipino. In addition to the new roof and revisions and remodeling, that prominent Newport News firm designed a new facade which does credit to the most modern plant.

The building is occupied by the R. K. Laros Silk Co., of Bethlehem, Pa. Its output is a high grade of women's undergarments. Financing was by Hampton Industries, Inc., headed by John R. Lawson. The First National Bank of Newport News, Samuel H. Plummer, president, handled the mortgage. One of the ob-

(*Continued on page* 64)

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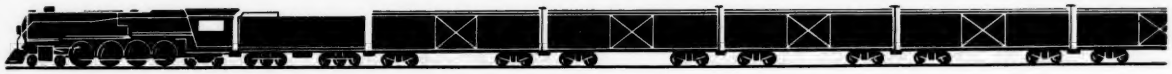

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HOTELS

Newport News Pushes Industry

(*Continued from page* 62)

stacles at the time of its establishment was to obtain permission for the alterations and improvements from federal government agencies.

Lewis A. McMurran, member of the Virginia state legislature and officer in the local bus company and other enterprises, revealed an interesting sidelight on the Laros negotiations. The head of the Laros firm delved deeply into all phases of peninsula life, even the cultural side. He learned of the local operatic society and this, with other factors, helped him make the decision as he was a backer of the famous Bethlehem choral organization in his company's home town.

Late July of 1947 saw announcement of the fourth plant obtained as the result of the $170,000 subscribed by lower peninsula business men to augment their industrial community. The Asheville Mica Co., of Asheville, N. C., decided to locate on a site near the Siris operation on the local small boat harbor. One story masonry buildings are now under construction there.

Financing of the project—the buildings are expected to cost between $300,000 and $400,000—was arranged by the Peninsula Industrial Finance Corp., a state corporation created to handle such matters headed by Raymond B. Bottom, local newspaper publisher. Expense of construction is to be defrayed over a period of 10 years in the form of rental

The Asheville company is understood to be the world's largest fabricator of mica. Newport News' strategic position near the mouth of the Chesapeake Bay was one of the factors in establishment of the new plant, as much of the company's raw materials come from abroad.

Next came the Arkell Safety Bag plant. Frequent trips by the special committee composed of Industrial Commissioner Bentley, City Manager Biggins and C. K. Hutchens, local business man, were necessary to persuade the company to come to Newport News. The inducement offered by the committee was a plant already built. Originally it was designed to make pleasure boats by the Horace E. Dodge Boat and Plane Corp. and more recently occupied by Gar Wood.

The Arkell operation will be the fifth brought to the area by the promotion campaign. Machinery soon to be installed will be worth a million dollars. Employment at the start will approximate 200 workers. The property purchased at $575,000 by the Arkell organization is about 100 acres, 30 of which are occupied by the buildings and 70 in a private plane landing field. The company makes elastic and waterproof paper bag linings and shipping bags such as those used in bagging cement and for protection of packing house products.

The sixth plant marked an experiment on the part of the industrial committee. Several industries had been lost because no building was available. To overcome this obstacle, the committee decided to erect a model building. A site at Hilton Village, a short distance up the James River was donated by a civic-minded citizen. Plans were prepared and the 90 by 159-foot building was placed under construction for the next prospect. It also has served as a yardstick to determine the level of construction costs in the Newport News area. The square foot cost is approximately $3.50 a foot.

Julius Kayser & Co., manufacturers of women's hosiery, fabric gloves and rayon underwear, contracted to lease the new building for 10 years at an annual rental of $7,896. This will repay the $60,000 investment of the industrial committee. Money from the lease will revert to a revolving fund to be used for erection of other structures as the need arises. About 360 workers will be required at the start of Kayser operations.

Since landing the seventh industrial operation—yet to start in an existing building in Hampton—the industrial committee has been negotiating with New England interests for an industry where the investment might run as high as $4,000,000. Three others are in prospect. These include the worsted mill and the molded rubber products plant. Four or five new additions to the Newport News industrial scene are seen within the next three or four months.

In addition to the seven new plants procured under the diversification program, Newport News and peninsula leaders emphasize the resulting increase in business for the service establishments and the new businesses and industries developed by local initiative. These have absorbed many of the workers who liked an area and stayed on after the war activities had subsided.

South's Trade Balance

(*Continued from page* 61)

portance in the questions as to why three states in the South should show an excess of crop exports while the remainder show excess of imports; why four should show excess of livestock exports, the others showing deficits; why eight states should show a favorable trade balance in manufactured products, the other eight showing the opposite.

The most obvious answer is not always the true one. Some of these situations arise from sound causes. Others indicate conditions that offer room for improvement.

Studies to appear in future issues of MANUFACTURERS RECORD will take up these questions in detail, singly or in groups, according to their importance.

Pomona General Manager

W. Basil Hill, of La Grange, Ga., formerly an executive of the Callaway Mills, has been appointed resident vice president and general manager of the Pomona Manufacturing Co. and will assume his new duties on or about Nov. 1.

Opens Boston Office

Georgia Hardwood Lumber Co. will open a wholesale warehouse and distributing yard at Boston on November 1, James L. Buckley, vice president, announced here.

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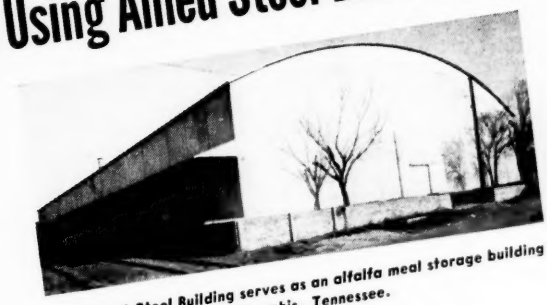

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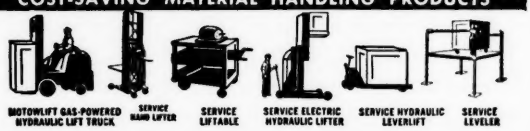

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Southern Construction at Peak

(*Continued from page* 37)

ulated for such projects during the preceding month. This figure also was above the total for highway work recorded in the same month of last year.

October's public building total of $29,615,000 included $11,790,000 for government structures of various kinds and $17,825,000 for school construction. The total was below that for September and for October of last year, while the government building valuation was about the same as in the preceding month and above that for the tenth month of 1946.

Engineering construction in October was at the peak of a three-month upward trend. The figure for such work was $25,551,000, as compared with the $14,130,000 for September and the $6,381,000 for August, which latter incidentally is the low point of the current year. Sewer and water work with its $12,599,000 total constitutes about one-half of the figure, being closely pressed by the $12,073,000 for projects such as dams, drainage and earthwork.

Building volume for the country as a whole is on the upgrade, in the opinion of the Producers Council, national organization of building material manufacturers, which observed in October that "costs are stabilizing, materials shortages are disappearing, the productivity of labor is improving, building time is being shortened and the quality of new building is getting back to normal."

Charges of "featherbedding" in construction, however, were heard in Washington where a sub-committee of the House of Representatives charged that unions have refused to allow use of labor-saving methods in some instances and in others have required employment of two artisans of separate unions because of the prospect of jurisdictional strife due to dispute over just who makes a particular installation.

In the same vein, labor relations experts warned that slowdowns are apt to increase in the near future as a means of opposing the Labor Management Relations Act. A slowdown is probably taking place, they say, if there is a decline in incentive earnings, if unit labor costs rise more rapidly than the bill of wages, if tardiness is on the increase.

Associated General Contractors of America has recently stated that "while the costs of heavy engineering construction, such as dams and earthmoving projects, are remaining steady in many areas, the costs of building construction such as factories, commercial structures, large residential projects and highway construction are continuing a slight upward trend."

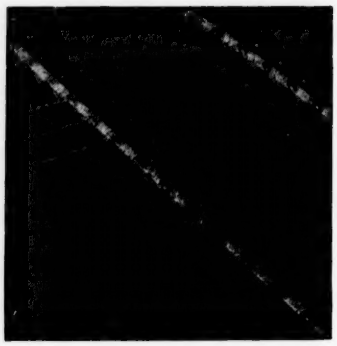
"The trend," that contractors' organization emphasizes, "follows cost increases which can be perceived for commodities and services in general and is principally caused by higher material costs, recent wage increases for construction trades in many cities and a low labor producitvity, which continues to be lower than prewar standards for output."

Another building products manufacturers' group—The Building Products Institute—says "home building has recovered from its wartime shutdown at a considerably faster rate than automobile production." Douglas Whitlock, Institute chairman, late last month stated "in the first two full years after the war, the number of housing starts will have been 113 per cent of the 1940-41 average, whereas passenger car production will have been only 77 per cent of the prewar rate."

"Despite the fact that housing starts since the war have not equalled some of the goals which were set," he observed, "it is now clear that the construction industry has performed a highly creditable job in getting back into housing production as rapidly as it has." He cited 670,500 new housing units started in 1946 and approximately 825,000 scheduled to start this year.

The Federal Works Agency sees plenty of work ahead for the construction industry with an estimated need for new construction approaching $21,000,000,000 in 1950. James W. Follin, assistant administrator, estimated $12,000,000,000 in new construction this year and said it is "second only to the top wartime construc-

(*Continued on page* 68)



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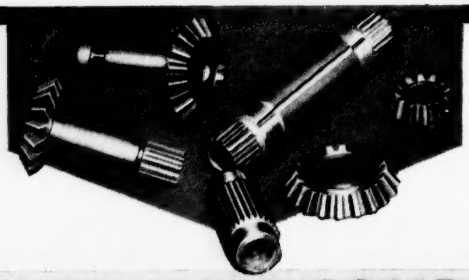

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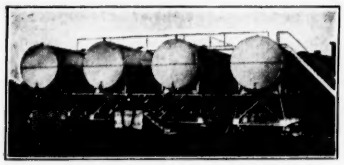

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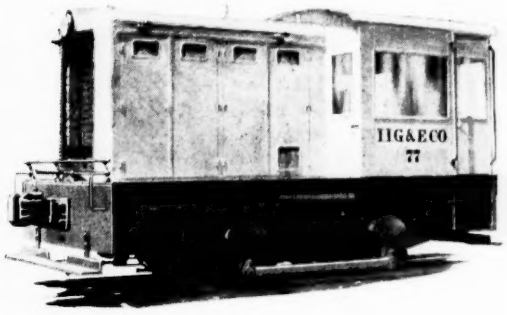

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Construction at Peak

(*Continued from page 66*)

tion of 1942."

"It is difficult to estimate the physical volume for 1947," he said, "because statistical data are not yet available, but wholesale prices of building materials have gone up considerably and so have wage rates. Because of these sizable increases in construction costs, I would guess that a round figure of $6,500,000,000 for this year in terms of 1939 prices would come pretty close to the final figures. Actually, the physical volume of 1947 construction is probably less than it was in the late twenties, not much over 1931 and about the same as in 1939 and 1940.

"To set the construction picture in another way, new construction activity averaged about 10.5 per cent of national income during the 20-year period from 1929 to 1939. It is now running but little more than half that rate given in terms of current dollars. Construction volume today is about the same as it was in 1930.

"Construction prices have risen faster than the prices of manufactured goods. The relation of income to construction costs should be a good indicator of ability to purchase the products of construction. We find that family income of non-farm families, in terms of current dollars, rose about 130 per cent from 1915 to-mid-1917, and we find that construction costs have risen 320 per cent. It takes more out of the family income to pay for a house today than it took out of the family income in 1915."

New construction put in place during September, the latest month for which figures have been estimated, is valued in the neighborhood of $1,262,000,000, according to the construction division of the Department of Commerce, which points out that the estimate is more than a seasonable gain of two per cent over August and an increase of eighteen per cent over September of 1946.

New construction during the first nine months throughout the country, says that agency, is estimated at $9,022,000,000, a gain of thirty per cent over the $6,928,000,000 for the first nine months of 1946. Total private construction in the current three-quarters of a year is estimated at $6,904,000,000; total public construction, at $2,118,000,000. Highways accounted for $809,000,000 of the public total; sewer and water work, for $222,000,000.

Maj. Gen. Philip B. Fleming, Federal Works Administration, early in the month cited a $2,300,000,000 backlog of public construction as representing the advance planning program of the Bureau of Community Facilities, whose program terminated June 30 with utilization of the $65,000,000 appropriated for the purpose in developing the local public works backlog. General Fleming advocates legislation to authorize $100,000,000 for stream pollution abatement.

Estimates by the Securities and Exchange Commission place new plant and equipment expenditures by American business, exclusive of agriculture, at $4,000,000,000 for the last quarter of 1947. The figure is about the same as that for the third quarter and about $100,000 greater than actual expenditures in the second quarter.

Planned expenditures by manufacturing companies in the fourth quarter are estimated at $1,800,000,000, or forty-five per cent of the total for all industry in the country. Mining and electric and gas utilities plan about the same expenditures as for the third quarter. These were $170,000,000 and $500,000,000, respectively.

Railroads are expected to increase their expenditures to $370,000,000 in the last quarter, as compared with the $290,000,000 in the third quarter. Other transportation companies are seen lowering their expen-

(*Continued on page 76*)

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PROPOSALS

Bids Nov. 14

ST. PETERSBURG PORT AUTHORITY

PINELLAS-MANATEE BRIDGE

Sealed proposals for the construction of the St. Petersburg Port Authority Pinellas-Manatee Bridge across Tampa Bay will be received at the offices of The St. Petersburg Port Authority, City Hall, St. Petersburg, Florida, until ten o'clock on the morning of Friday, November 14, 1947, and then publicly opened. The opening and tabulating of bids will take place if necessity or convenience so indicates, in the Auditorium on the third floor of the said City Hall. It is contemplated that bids will be accepted or rejected within fifteen days after the opening thereof.

The work will be in seven (7) contracts as follows:

Contract 1—Hydraulic embankment.
Contract 2—Road construction on embankment and shore.
Contract 3a—Substructure for main steel spans.
Contract 3b—Bascule bridge complete.
Contract 3c—Reinforced concrete trestle.
Contract 4—Main steel spans.
Contract 5—Miscellaneous work including electrical installations.

Contracts will be awarded to the responsible contractor or contractors with the lowest bid or bids on the complete contract or combination of contracts as set forth in the specifications. The Port Authority retains the right to eliminate items in each of the contracts subsequent to the selection of the low bidder, without reference to the fact that change of the items might change the order and position of the bidders.

A complete description of the work and full information for the bidders is given in the bound volume of specifications. Drawings, specifications, proposal blanks and forms for the contract and bond may be seen at the office of The St. Petersburg Port Authority.

Complete copies of the foregoing will be furnished by the Secretary-Treasurer of The St. Petersburg Port Authority upon payment of $100.00 per set. This deposit will be refunded except for charges for shipment.

The right is reserved to reject any and all bids.

St. Petersburg, Florida, October 15, 1947.

ST. PETERSBURG PORT AUTHORITY
By: John P. Welch
Secretary.

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Guaranteed Work Week

(Continued from page 34)

lective laying off than would normally be feasible under customary provisions. Here is a clause that protects the employer in such cases:

"In all cases of layoffs, and of reemployment following layoffs, the working needs of the plant shall be given first consideration. Seniority rights shall prevail in general, provided that the remaining employees have the ability and the physical fitness to do the available work."

It should be pointed out here that many employees do not fully understand the employer's right to lay them off under a guaranteed workweek plan—and the inclusion of such a clause in the contract will "advertise" this right, which was upheld by an arbitrator in a recent test case brought by a union.

Eligibility Requirements

One of the great dangers facing the employer who agrees to the union demand for a guaranteed workweek is that the clause which finds its way into the contract may be too sweeping and unlimited. All such innovations should be negotiated by experts who can "look out" for the employer as capably as the union's bargaining agents "look out" for their own people. Institute field men who have had such experience with the guaranteed workweek made a point of specifying minimum safeguards to determine which employees are eligible for the guarantee.

The guarantee, they insist, should be limited to employees with at least a minimum length of service—usually 90 days. Furthermore, only those who are physically capable of performing the available work should be covered. These safeguards are embodied in the following Institute Recommended Clause:

"All regular employees shall be guaranteed a minimum of 40 hours' work per week, provided the employee reports for work and is physically able to perform the available work. The employer must notify an employee by the end of the shift on Friday of a preceding week that there will be no work available for such employee during the following week. Regular employees are those who have worked for the employer for a consecutive period of 90 days or longer."

Stabilizing Business is Part of Stabilizing Work

In more ways than one, the guaranteed workweek is a compromise. It falls far short of the ideal, although it is far more pragmatic and elastic than the guaranteed annual wage. However, few members of top management regard layoffs and idle periods as inevitable, and they are as anxious to eliminate them as any union leader. Security as a dominant urge is recognized at all levels, despite the difficulties in making it available to all." The regularization of employment, wherever possible, is a fundamental step to that goal. Everything management can do to keep things on an even keel—through better planning, smoother operation, more aggressive promotion of new business, the addition of new products or new lines, and whatever else will help to keep production going—is a responsibility for management.

Human relations is an important key—not only the enlightened overall attitude which makes the guaranteed workweek a possibility, but also the day-by-day handling of contacts with employees. A plant in which the *desire* for teamwork is fully shared is the one in which any plan of this sort is most likely to succeed.

Illustrated above is the Models AEH to AHH series of 4-cycle single cylinder Wisconsin Air-Cooled Standard Engines, to which the following specifications apply:

MODEL	AEH	AFH	AGH	AHH
Bore	3"	3¼"	3½"	3⅝"
Stroke	3¼"	4"	4"	4"
Cu. in. Displ.	23	33.2	38.5	41.3
Hp. Range	4-6	5-7	6-8.5	7-9
Weight	130 lbs.	180 lbs.	180 lbs.	180 lbs.

If your equipment calls for an engine within the above power range, it will pay you to give serious consideration to the Wisconsin line . . . noted for rugged, heavy-duty serviceability and thorough-going dependability.

In addition to the engines listed above Wisconsin 4-cycle single cylinder engines are also available in 2 to 4 hp. sizes, and V-type 4-cylinder engines can be supplied in a power range of 13 to 30 hp. Detailed data furnished on request.

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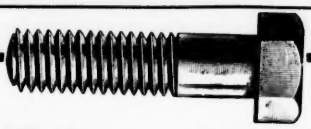

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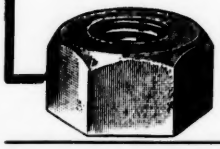

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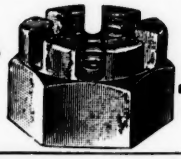

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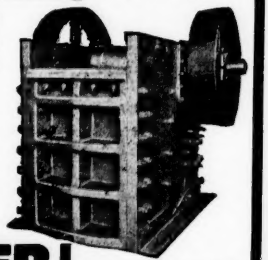

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(Continued from page 14)

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GALVESTON — Waples Lumber Co., office building and display room.

GALVESTON — Pittsburgh Plate Glass Co., remodeling building.

GREGGTON — Premier Oil Refining Co., $15,010, landing strip.

GROESBECK — Limestone County Electric Cooperative, 232 miles of distribution lines.

HEREFORD — Hereford Motor Co., motor building, $40,000.

HOUSTON — John Dee, service station and store building, $28,000.

HOUSTON — renovations to make way for studios and announcing booths and business offices of new radio station KLEE, W. Albert Lee, $100,000.

HOUSTON — Technical Instrument Co., $46,222, building.

HOUSTON — Kay Packing Co., packing plant.

HOUSTON — Hargis Motor Co., motor building.

HOUSTON — Brown & Root, Inc., remodeling and air-conditioning of building.

HOUSTON — Southwestern Paper Co., $170,000 office and warehouse building.

JOHNSON CITY — Pedernales Electric Cooperative, $262,000, 171 miles of lines.

JUNCTION — Kimble County Electric Cooperative, $96,697, 312 miles of distribution lines.

KARNES CITY — Karnes Electric Cooperative, $264,000, REA lines.

KENNEDY — Archer-Daniels-Midland Co., $1,000,000 flaxseed processing plant.

KIRBYVILLE — Jasper-Newton Electric Cooperative, $285,000, system improvements and 176 miles of electric lines.

LONGVIEW — Trans-Continental Gas Pipe Line Co., Inc., 26-inch O.D. transmission line at Rogers Lacy Field near Mercedes, Hidalgo County and 20-inch O.D. gas gathering line.

LUBBOCK — National Casket Co., business building, $33,320.

MARSHALL — Southwestern Bell Telephone Co., telephone building addition.

MIDLAND — Borden Co., $98,000, plant building.

MULESHOE — Bailey County Electric Cooperative, 108 miles of REA lines and improvements to system.

OLNEY — Fort Belknap Electric Cooperative, $185,000, 173 miles of line.

ORANGE — Sabine Supply Co., $123,694, warehouse building.

PETTUS — Magnolia Petroleum Co. and Stanolind Oil & Gas Co., plant, gas cycling, $5,700,000.

ROSENBERG — Houston Light & Power Co., service center building.

SAN ANGELO — Concho Valley Electric Cooperative, $280,000, system improvements, for warehouse facilities and 233 miles of line.

SAN ANGELO — Mustang Chevrolet Co., business building, $20,000.

SAN ANTONIO — W. Dickey Clay Manufacturing Co., addition to existing office building.

SAN ANTONIO — addition to present bakery, Richter's Bakery, $51,487.

SAN ANTONIO — Harper Brothers Dairy, dairy building.

SAN ANTONIO — building, Brand Engraving Co.

SAN ANTONIO — Texas Co., super-service station.

SAN ANTONIO — Swift & Co., George B. Coffin, building improvements.

SAN ANTONIO — extraction building, processing and mixing building plus boiler room, and an office building, for Valcar Enterprise, Inc.

SAN ANTONIO — B. Goodman, Kansas City, Mo., air-conditioning, $20,000.

SAN ANTONIO — International Harvester Co., air-conditioning general offices, $20,000.

SAN ANTONIO — San Fernando Archdiocesan Cemetery, garage and storage building.

SAN ANTONIO — Sinclair Oil & Refining Co., laying pipe line terminal.

TEXAS CITY — Monsanto Chemical Co., $20,000,000 plant expansion of facilities; construction started on new building.

TULIA — Swisher County Electric Cooperative, $430,000, 336 miles of lines.

VICTORIA — Crescent Valley Creamery, $77,850, creamery building.

VICTORIA — Hoffman Motor & Generator Sales & Service, commercial building.

WACO — Southwestern Bell Telephone & Telegraph Co., building.

WICHITA FALLS — North Texas Motor Co., $10,000, office and shop buildings.

WICHITA FALLS — Humble Oil Co., service station, $125,000.

WICHITA FALLS — Coca Cola Co., $19,100, garage and storage warehouse.

YORKTOWN — garage building, Migura Brothers.

VIRGINIA

CULPEPPER — City, $29,790, addition to power plant building.

LYNCHBURG — H. A. Wells, loading shed.

LYNCHBURG — Philadelphia Gear Works, Inc., branch plant.

NEWPORT NEWS — Julius Kayser and Co., factory.

NEWPORT NEWS — Asheville Mica Co., $153,500, plant; $300,000.

NORFOLK — Virginia Electric & Power Co., install steam turbine generating unit, $3,000,000.

PULASKI — Norfolk and Western Railway Co., engine shop facilities.

RICHMOND — Louis O. Bowman, Inc., alterations and improvements to building.

RICHMOND — Virginia Electric and Power Co., 17 mile aerial transmission line.

ROANOKE — Norfolk and Western Railway Co., $600,000, complete modernization of railway's camp cars.

ROANOKE — Graves-Humphreys Hardware Co., building permit for additions and interior alterations to existing buildings, $195,000.

ROANOKE — Puritan Mills, Inc., $70,000

(Continued on page 76)

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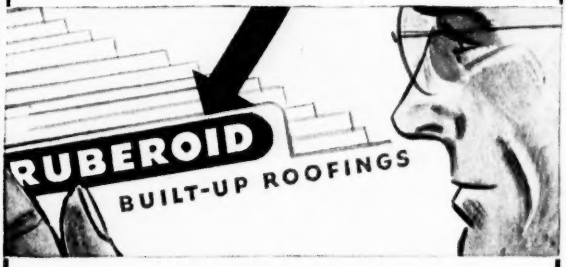

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Potomac Soundings

(Continued from page 22)

wage level should not be further increased without recognizing the need for differentials such as were applied regionally by W.P.A. when the government itself was meeting payrolls."

Established in 1937 for the specific purpose of resisting all discriminatory legislation which threatened the competitive position of lumbering in the South, the Southern Pine Industry Committee has become one of the most vigorous and effective trade associations in the country. C. C. Sheppard, of Clarks, La., is Chairman, and H. C. Berckes, is Executive Secretary, with headquarters at 520 Canal Street, New Orleans 4, La.

The industry comprises some 17,000 production units scattered from the Potomac to the Rio Grande and Florida. Only 2.6 per cent of these mills turned out more than 5-million board feet each in the peak year 1942. Southern Pine production normally makes one-fourth to one-third of the nation's total lumber production.

It is a curious irony of American politics that the most militant legislative advocate of the proposed 75-cent minimum wage standard is Senator Claude Pepper, of Florida, a State which always has been an important segment of the Southern Pine production pattern.

Industrial managers interested in the contents and format of the Southern Pine study may obtain a copy gratis from Secretary Berckes.

South's Farm Income Higher

Cash income from farm marketings this year will be approximately 24 per cent above 1946 throughout the South, the Department of Agriculture reports.

Farm income for 1948 is expected to hold close to the 1947 level.

The survey figures include all cash income from livestock, dairy products and field crops, but do not include farm income from lumber, naval stores, or government payments for soil conservation. Neither do the figures include the cash value of farm products consumed on the premises by the family.

For the entire nation, 1947 cash income of farmers will reach the all-time record total of $30-billion, an increase of 18 per cent over 1946. The same figure for all States in the base year 1939 was $11-billion.

Total production expenses including local, but not federal, taxes are up 16 per cent for 1947, aggregating $16.2-billion, and leaving a net cash income of $13.8-billion for the year. In addition, our farmers will have an invisible income of $4.3-billion this year from farm produce consumed at home, plus the rental value of their farm dwellings. This amount added to the net cash income gives a net farm income of $17.5-billion for the year.

Below are gross farm marketings in the Southern States for the eight months January-August, 1946 and 1947:

	Eight months Gross farm marketings (in millions)	
State	1946	1947
Alabama	$110	$149
Arkansas	159	196
Florida	298	245
Georgia	206	242
Kentucky	265	338
Louisiana	97	120
Maryland	137	167
Mississippi	128	171
Missouri	460	620
North Carolina	246	250
Oklahoma	275	411
South Carolina	159	147
Tennessee	209	265
Texas	782	1,059
Virginia	178	226
West Virginia	56	65
South	$3,765	$4,671

General Chemical Purchases West Virginia Plant Site

General Chemical Co., New York, subsidiary of Allied Chemical & Dye Corporation, has announced the purchase of a 50-acre parcel on the Kanawha River at Nitro, W. Va., as a site for a new plant.

Construction of sulfuric acid producing facilities will be started immediately. These are expected to be in production by early spring. The plant, to be known as Nitro Works, will serve industry in the Charleston, W. Va., area and other nearby localities. Acid shipments will be made both by barge and by rail.

General Chemical Company, which is one of the nation's leading producers of industrial, agricultural, and scientific chemicals, has sulfuric acid producing units at many of its other Works in key industrial centers throughout the United States and Canada.

The Company is recognized as America's pioneer with the Contact Process of sulfuric acid manufacture, a development which made possible the economical production of pure, high strength acid.

General Chemical Co. is not new to industry in W. Va., as during World War II its subsidiary, General Chemical Defense Corp. operated West Virginia Ordnance Works at nearby Point Pleasant and was recognized as an outstanding producer of TNT.

Lion Oil Makes Report

Lion Oil Co. and subsidiary consolidated net income for the first nine months of 1947 amounted to $7,475,054.49 before provisions for Federal and State income taxes. Provisions for such taxes in the sum of $2,618,733.35 resulted in a net income for the first nine months of 1947 of $4,856,321.14 or $4.15 per share on the 1,170,335 shares now issued and outstanding.

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Plant Expansions

(Continued from page 72)

storage building.

ROANOKE — Noland Co., Inc., building, spur across Shenandoah Ave.

WEST VIRGINIA

CHARLESTON — Chesapeake & Potomac Telephone Co., additional circuits to points in southern parts of state and installation of more toll switchboard positions and other improvements, $758,000.

CHARLESTON — Frank S. Mullen, Inc., Hudson sales and service building, $75,000.

MORGANTON — W. R. Mullis, garage building.

Wage Near Net Income

The annual compensation of a factory worker is closely related to his net contribution to the income originated by his industry, according to an analysis of wage-income relationships, which has just been completed by the National Industrial Conference Board. The net income originated by an industry and its annual salary-wage have moved "in close correspondence" in past years. Industries with the highest contribution per employee to our national income paid the highest annual salary-wage, the analysis notes. Annual earnings "also tended to increase within an industry as the amount of net income per employee increased."

Construction at Peak

(Continued from page 68)

ditures to $220,000,000 from the $250,000,000 of the third quarter. Commercial and miscellaneous expenditures—the latter includes trade, service, finance and communication—will also drop with $930,000,000 in the fourth quarter.

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